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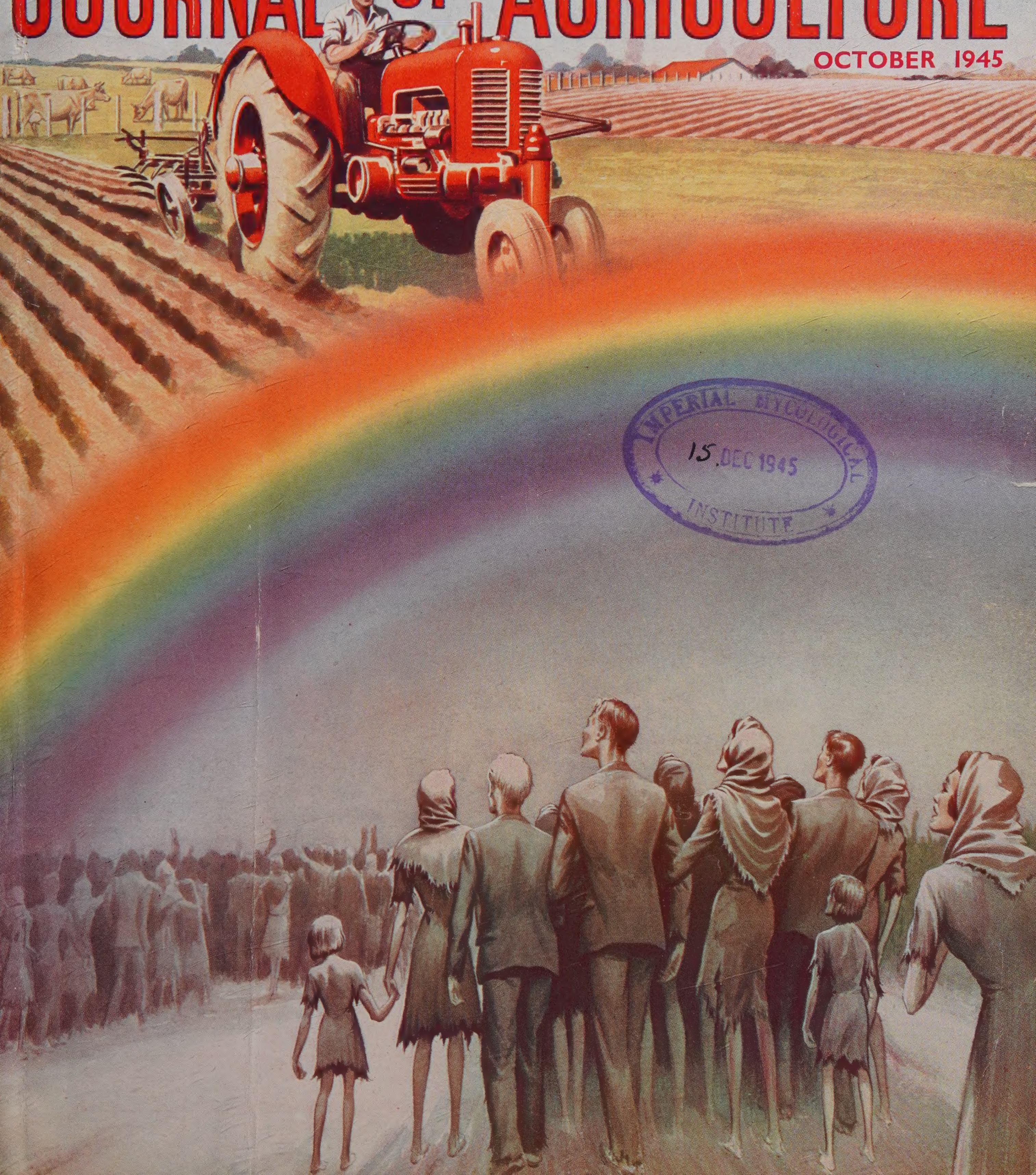

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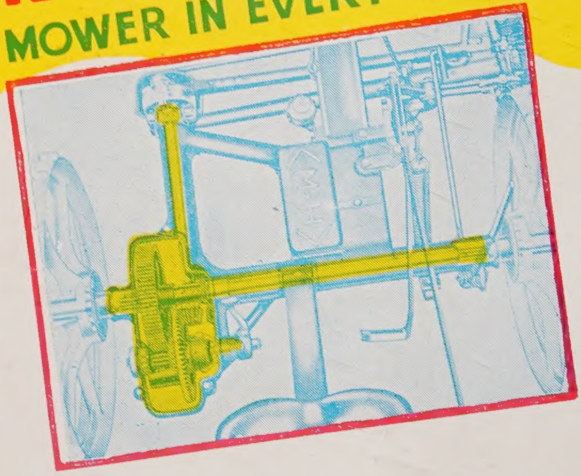

Illustrating how the famous Massey-Harris Oil-Bath feature gives positive lubrication to the gears, axle and crankshaft. Oil seal washers prevent leakage.

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Special features ensure long life and trouble-free service. Notable are the "NIKON" precision machine cut main gear, the straight-through one-piece axle, and the six-point clutch. Perhaps the feature that does most to prolong the life of the Massey-Harris No. 33 Mower is the oil-bath principle of lubrication illustrated above. Besides providing a smooth, quiet running machine this oil-bath also affords protection against wear and adds to the life of the machine.

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No. 34 Oil Bath Traction Trailer.
No. 35 Power Take-off.
No. 6 Semi-mounted.
No. 24B One-horse.

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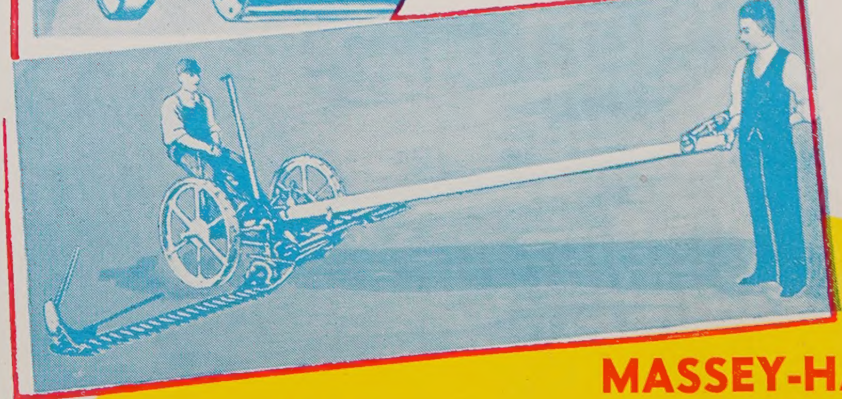

A correctly balanced mower. Note the lightness of the pole in working position.

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The "Service Arm" of the New Zealand Farm

New Zealand Journal of Agriculture

Vol. 71, No. 4. Published by Direction of Hon. B. Roberts, Minister of Agriculture. October 15, 1945.

Calfhood Vaccination Recommended

Contagious Abortion Losses Significantly Reduced

INVESTIGATIONS to determine the value of calfhood vaccination in reducing the losses from contagious abortion in New Zealand dairy herds have been conducted by the Department of Agriculture since 1941. In this article M. B. Buddle, Department of Agriculture, Animal Research Station, Wallaceville, shows that losses can be significantly reduced in this way, and recommends to dairy farmers the wide application of calfhood vaccination.

ANIMALS vaccinated in heavily-infected commercial dairy herds during 1942 completed their first pregnancies in 1943, and these results are summarised below:—

1942.		1943.	
Heifers Not Vaccinated.		Heifers Vaccinated.	
Number Mated.	Aborted.	Number Mated.	Aborted.
420	135 32%	465	22 4.7%

Steep Reduction

Calfhood vaccination has been responsible for reducing the abortions in the heifers in 1943 to less than 5 per cent. in herds where 32 per cent. of unvaccinated heifers had aborted in 1942. A comparison of the abortion percentages of the unvaccinated mature cows in these herds in 1942 and 1943 revealed 9.7 per cent. and 13.5 per cent. respectively, which indicated that heavy infection had been successfully resisted by the vaccinated heifers in 1943.

In 1942 the Department of Agriculture initiated the scheme whereby calves could be vaccinated against contagious abortion at no cost to the farmer. The farmers who participated in the scheme were required to identify their heifer calves individually and to co-operate in furnishing returns so that the value of vaccination in reducing abortions on these farms could be reliably determined.

In 1943, 18,332 heifer calves in 1,160 herds were vaccinated, and the records of the first pregnancies of 10,725 of these animals in 815 herds last season are shown below:—

1943.		1944.	
Heifers Not Vaccinated.		Heifers Vaccinated.	
Number Mated.	Aborted.	Number Mated.	Aborted.
11,268	2,494 22.1%	10,725	324 3.0%

The average abortion rate for heifers in New Zealand is 12 per cent., so in these herds where the incidence of abortions in heifers in 1942 was as high as 22 per cent. only 3 per cent. of the vaccinated heifers aborted from all causes in 1944.

Not all abortions in vaccinated heifers are due to specific infection with *Brucella abortus.* Blood tests conducted on a large proportion of the vaccinated heifers which aborted in 1944 revealed that 36 per cent. of these animals were not infected with the organism responsible for contagious abortion, so the abortions in these animals must be attributed to some other cause. On this basis less than 2 per cent. of the vaccinated heifers in 1944 failed to resist infection with the causal organism of contagious abortion and terminated their pregnancy with an abortion.

The results from the field investigations will determine the duration of the effective immunity against abortion of animals vaccinated as calves. In 1944 the results of the second pregnancies of the heifers vaccinated in 1942 became available. Only 1.4 per cent. of these animals aborted from all causes in 1944, thus demonstrating that the immunity induced by vaccination during calfhood was adequate to protect against abortion for at least two pregnancies.

Abortions from other causes than specific infection with *Brucella abortus* do occur in cattle in New Zealand, and against these calfhood vaccination cannot afford protection.

Disease-free Herds Quickly

The continuance of the wide application of calfhood vaccination in infected herds will render possible the gradual replacement of infected mature cows as they are culled for economic reasons by animals vaccinated as calves, and will establish in their stead herds of resistant disease-free animals in a relatively short space of time.

In clean herds calfhood vaccination is also advocated as a sound and safe procedure, as heavy losses in unprotected animals result when infection is inadvertently introduced into clean herds. *Brucella abortus* strain 19, the organism utilised for calfhood vaccination, has been shown to be incapable of establishing a permanent infection when inoculated into calves, and it is not secreted by vaccinated animals to menace human or animal health.

As the vaccine is a suspension of living organisms of attenuated virulence, its successful employment in the control of contagious abortion is dependent on strict compliance with specific requirements in its manufacture and its use in the field. The restriction of the handling of the vaccine in the field to qualified veterinary surgeons and officers of the Livestock Division of the Department of Agriculture is to ensure that the vaccination of stock is conducted under the conditions necessary to produce the most satisfactory results.

The calfhood vaccination scheme of the Department of Agriculture has been greatly extended in the past two years, 43,000 calves being vaccinated in 1944 and 107,000 this year.

The results achieved in field investigations in New Zealand indicate that vaccination during calfhood induces a high degree of immunity against contagious abortion, and the extensive application of this method of control will reduce very substantially the incidence of abortion with consequent increased production in dairy herds.

Vaccination Against Contagious Abortion

THE excellent results which have been obtained from vaccination against contagious abortion are described in the preceding article by M. B. Buddle. These results are necessarily confined for the most part to heifers calving for the first time. The Department of Agriculture is particularly anxious to continue to receive reports of the breeding history following vaccination, and particularly as it will this year be possible for the first time to assess the effect of vaccinating calves on reducing abortion in 3-year-olds as well as 2-year-olds. As almost all the cows will have calved by the time this article appears, all dairy farmers who have had calves vaccinated are earnestly requested to fill in the forms and return them immediately. Form Ag. A/11 was issued to all dairy farmers when their calves were vaccinated. If the form has been lost, another can be obtained from the nearest office of the Department of Agriculture or from the Farmers' Veterinary Club if vaccination is conducted by a club veterinarian.

How to Fill in Form

Filling in the form should present no difficulties. First complete the "Breeding Summary" for heifers and cows which have calved this season. There are four columns—for 2-year-olds vaccinated, 2-year-olds non-vaccinated, 3-year-olds and over vaccinated, and 3-year-olds and over non-vaccinated. The age is the age at calving. Farmers whose calves were vaccinated for the first time in 1944 will have vaccinated and non-vaccinated 2-year-olds, but the cows 3 years and over will all be non-vaccinated. Farmers whose calves were vaccinated in 1943 as well as 1944 will have vaccinated and non-vaccinated 2-year-olds and vaccinated and non-vaccinated 3 years and over. Remember that an abortion is defined as any calf born under 8 months which fails to live. If it is born more than 8 months after the last service and is dead at birth, or dies immediately after birth, enter as a full-time dead calf. If the calf lives, it should be shown as a normal calving, no matter when the last service occurred, as cows sometimes accept service when they are in calf. If the total of abortions, full-time dead calves, normal calvings, and empty does not add up to the number of cows mated, the reason should be indicated; for example, two died, one sold, etc.

It should be noted that details are required in the "Abortion and Full-time Dead Calves in Vaccinated Cows" section for vaccinated cows or heifers only. Be careful to fill in the identification marks, as these are necessary to enable results of blood tests to be tabulated.

Applications for Vaccination of This Year's Calves.

On the opposite side of the form will be found space for the application for vaccination of this year's calves. It will assist greatly if all applicants will fill in the identification marks when making their application, as this saves much work for vaccinating officers and clerical staff. If individual ages of calves are not known the dates of birth of the youngest and oldest calves must be given.

Enquiries are often received regarding vaccination of older animals. In general, vaccination of cows is not recommended, as vaccination has no effect on any animal already infected, and, moreover, in most herds the incidence of abortion is much greater in heifers than in older cows. However, if serious trouble is being experienced in older cows, arrangements can be made to vaccinate them, but they must be empty at the time of vaccination and must not be mated for one month after. In such cases dairy farmers are recommended to consult the nearest veterinarian. Vaccination of bulls is not recommended.

New Applications.

If applying for vaccination for the first time, use Form Ag. A/14, which may be obtained from Departmental offices or from Farmers' Veterinary Clubs.

Apply Early

The number of calves being vaccinated has increased to such an extent that this year it will almost certainly be necessary to make arrangements for calves to be brought together in central positions, such as saleyards, to enable them all to be vaccinated by the limited number of veterinarians and stock inspectors available. It is, therefore, absolutely necessary that farmers apply early, and no guarantee can be given to vaccinate calves for which applications are received after December 1. If you belong to a veterinary club, forward your application to the secretary. All other dairy farmers should forward applications to the Director, Animal Research Division, Department of Agriculture, P.O. Box 3004, Wellington. The Departmental veterinarian or stock inspector or the club veterinarian will advise later concerning the place and date of vaccination, which will probably be in January, February, or March. Vaccination this year will again be free.

Dairy Farmers!

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Max Scour Mixture given periodically with the milk will help to prevent your calves from contracting white and blood scours. The high qualities of "Max" have been proven time and again, and moreover it contains excellent tonic properties. Calves regularly dosed with "Max" stand a better chance of combatting this ailment. If you have any calves already affected, dose them with "Max" immediately. The results will amply justify our confidence.

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More Meat and a Better Pasture

ENDEAVOURS by the New Zealand Meat Producers' Board to encourage reduced consumption of meat locally and increased shipments to Britain have had encouraging results this season, but the position in Europe, and particularly Great Britain, is still desperate. In this statement by Mr. G. H. Grigg, chairman of the Meat Producers' Board, the position in European countries is reviewed and suggestions made by which farmers can help both themselves and the export market.

THE British Minister for Food, Colonel Llewellin, made the following statement recently:—

"The New Zealand Government has decided on two steps to help the world situation, and particularly this country—to reduce the butter ration from 8oz. to 6oz. a week, which will save something like 5,000 tons of butter a year, and at the same time to reduce the meat ration from 1s. 9d. to 1s. 6d. a week, which will save some 15,000 tons of meat a year. It is a very generous action on their part, and I would like to say how very grateful all of us here are."

Desperate Straits

Later in his speech he says that the consumption of meat in Britain with the meagre ration of 1s. 2d. per week amounts to 34,000 tons per week, so when he says "how grateful all of us are here" for an increase of meat amounting to three days' supply in the year the very desperate straits they are in is brought home to us. On top of this comes the news that Britain is prepared now to cut their ration from 1s. 2d. to 1s. per week to conserve their supply and be able to release 76,000 tons to the starving people of Europe. Let us have a look at the meat position in some of the European countries.

FRANCE: Home-grown supplies a very long way short of minimum requirements, possibly 200,000 tons.

BELGIUM: Imported meat short by many thousands of tons.

HOLLAND: Shortage of all classes of food; calling for immediate relief.

LUXEMBURG: Reduction of over 30 per cent. of the cattle population.

DENMARK: Shows a decrease from 1943 of over one third of pig population in 1944.

GREECE AND YUGOSLAVIA: A total reduction of 40 per cent.

Heavier Carcasses

Last year the British Minister of Food, through Mr. Banks Amery, made an urgent request to the farmers of New Zealand for an increase in butter, cheese, and especially meat, and to encourage the meat industry the Meat Board altered the price schedule to induce farmers to turn out heavier-weight carcasses; that this move was fairly successful is shown in the recent returns, which record an increase in weight of lambs in the North Island of 1.75lb. and of .75lb. in the South Island. The South Island returns would have been more favourable had not the weather conditions been so much against lamb fattening. There is also an increase of 413,000 quarters of beef, 130,000 wethers, 60,000 ewes, and 150,000 lambs.

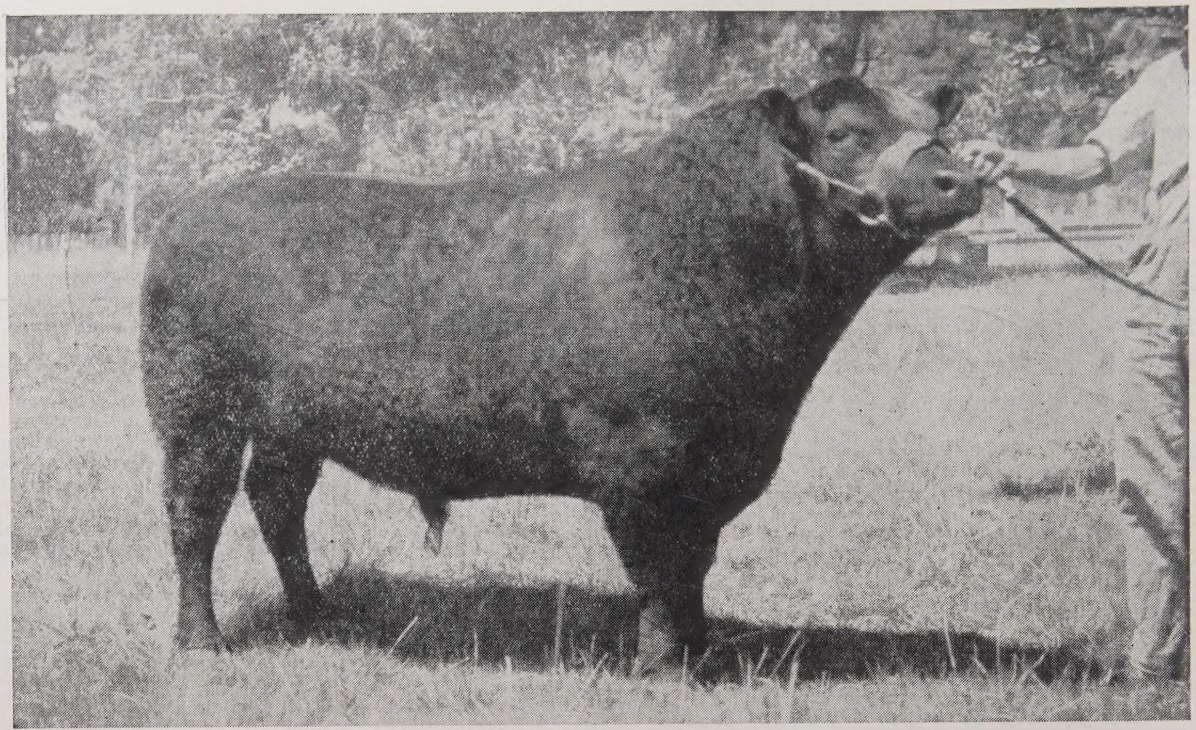
Recently Mr. Hinton, who was sent by the British Minister of Food, asked us to try again to do everything in our power to raise the quantity still higher for 1946. With this in view the Meat Board are investigating every possible avenue, and have asked Primary Production Committees to ascertain the number of horses available in each district, to see if there would be sufficient to make a shipment of horse flesh to Europe; much as we in this country abhor the idea of eating horse flesh, it is certain that on many of the dinner tables in Europe it would be appreciated. However, an examination of the most likely sources for increased supplies reveals a much wider scope than there would seem to be at first glance. For instance over 40 per cent. of our beef is in the boner class, our wether carcasses average 56lb., our ewe carcasses 55lb., and our lamb 33lb. Every one of those classes of meat could be tremendously increased by the production of more feed, thus not only helping the serious food position in Britain, but also financially benefiting the average farmer.

Greatest Scope in Lamb

Probably the greatest scope for increased meat production and the one most easily procured is in our lamb. This increase can be obtained without any grandiose plan, and by introducing or extending a rotation which will ultimately benefit the individual farmer and the country as a whole. The approximate average weight of our lambs is 33lb., while the Meat Board allows top price for lambs up to 42lb. This margin alone gives an opportunity to step up our meat supplies, for if the average weight were raised by say 5lb. per head, an additional 50,000,000lb. of meat or 22,321 tons would result. It is in our second lambs, however, that the greatest opportunity presents itself of stepping up very materially our tonnage of meat for export. Farmers know that a lamb is classed second grade for one reason—because it has not sufficient flesh, or in other words the lamb is not fat. It is rather astounding to know that in the North Island the average percentage of second lambs killed over the last 10 years is 31 per cent., while the figure for the South Island is 28 per cent. Thus almost a third of our New Zealand lambs are of second quality, with an average weight of approximately 27lb. Surely this is an avenue that should be explored—a source of waste reflecting on the ability of the farmer. Second grade lambs are little better than stores and they are sent to the works simply because the farmer has failed to provide sufficient feed to finish them off. The solution is to provide that additional feed that will put the lambs into the works at 37lb. instead of 27lb., or, better still, at 40lb. However, if these 3,000,000 lambs which are now put through the works as seconds had a further 10lb. added to each carcass, an additional 13,500 tons of high-quality meat would be available for Great Britain.

Bigger Lambs, Better Soil

Let us view the question from the practical farming point of view. On nearly every farm today are worn-out pastures that require renewing or will require renewal in the near future. Why not then plan a rotation that will not only eventually result in a satisfactory grass paddock, but will give a handsome return to the farmer and a significant increase in our meat exports. Such a rotation would include rape or chou moellier sown this spring to increase the average weight of all lambs, and particularly those that in the past have gone off as seconds, and then to permanent or short-rotation pasture. The supplementary fodder crop would not only give the additional essential feed for the lambs, but would build up the fertility of the soil. The cost of the crop, if a farmer has his own implements and equipment, should be round about £2 10s. per acre, and this acre should finish off up to 40 lambs, so that the scheme is quite an attractive one and should be given close consideration by those farmers producing fat lambs. It is recognised that many of these farmers already grow such crops as rape for topping off lambs, but the position should be closely studied to see whether or not a few more acres would step up their meat production, while to those farmers who depend entirely on grass and the fat lamb off the mother is commended a sound practical scheme which should be given careful consideration.



Te Ruanui Station's (C. Matthews Estate) champion Aberdeen Angus bull and runner-up "Meat and Wool" Cup, Poverty Bay Show, 1944.

As with many other Pedigree Flocks and Herds "WONDER" is used consistently by this well known stud to promote Virile Growth and General Stamina.

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Every consignment that leaves our Factories is Guaranteed to contain:—

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Sulphur
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Potassium Iodide
Charcoal
Meal
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"WONDER" CALCIUM MIXTURE CONTAINS A SPECIAL PROPORTION OF CALCIUM, SUITABLY COMBINED WITH PILCHARDENE OIL; "WONDER" PILCHARDENE MIXTURE, AN APPROVED CONTENT OF PILCHARDENE OIL, IN ADDITION TO THE FOREGOING.

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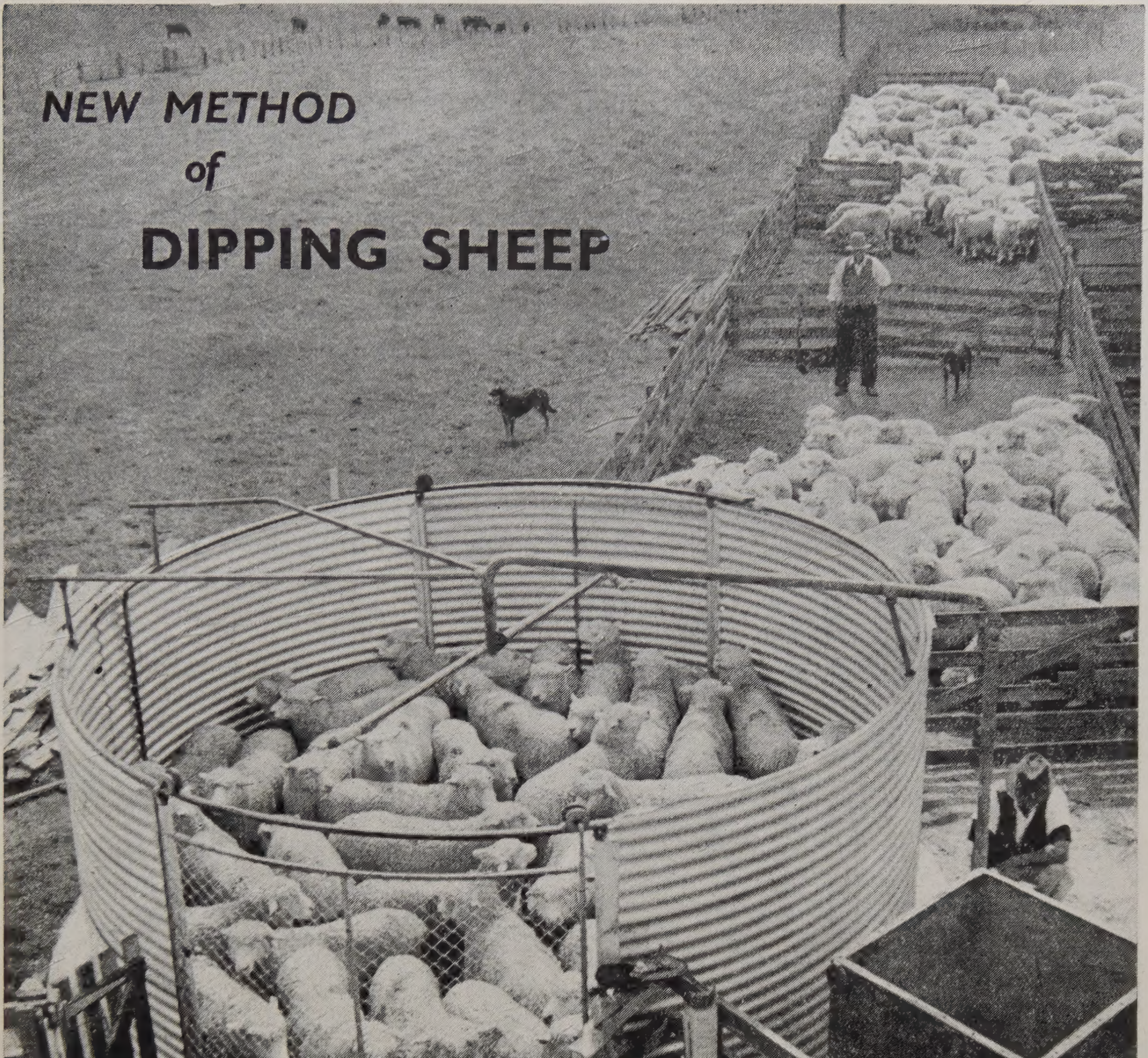
NEW METHOD of DIPPING SHEEP



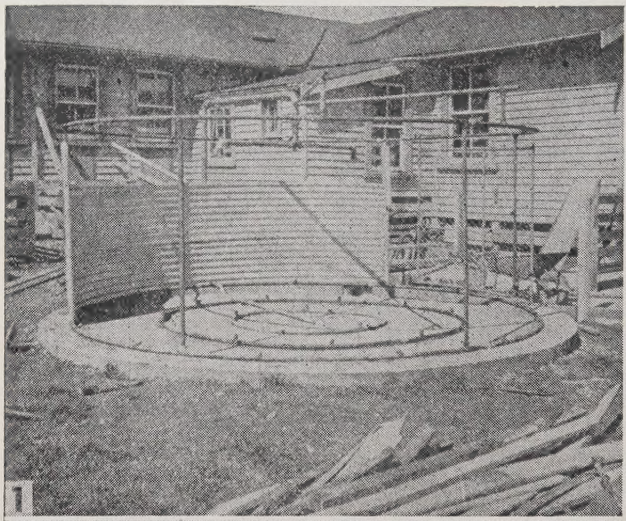
Australian Power-spray System Tested in N.Z.

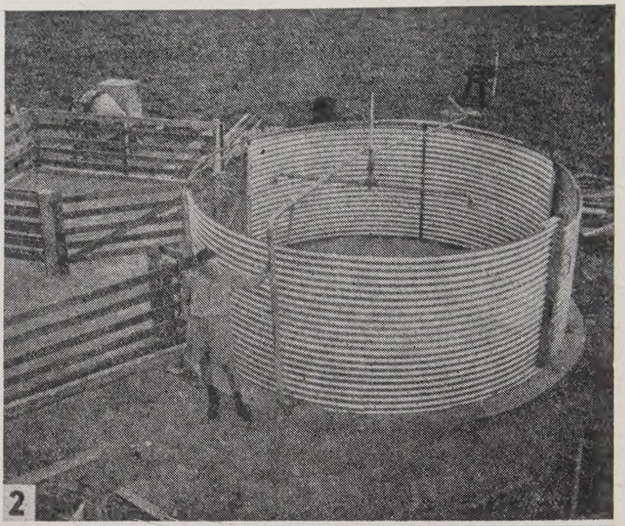
By J. E. DUNCAN, *Wool Supervisor, Wellington.*

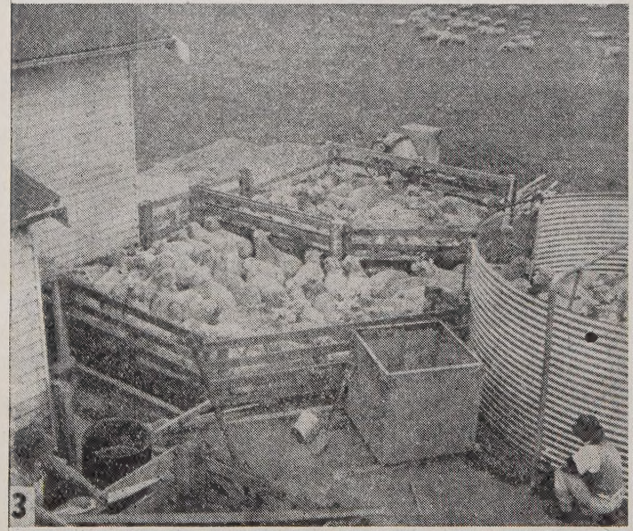
THE idea of spraying or showering sheep is by no means new, and has been in operation in Australia, particularly in Queensland, for a good many years. In New Zealand at least one shower dip has been in existence in Canterbury for 10 years or more. The method used in these instances could be called the gravity system, as the dip is lifted by a pump to a flat galvanised iron roof perforated with many small holes and falls like rain on the sheep in the pen below. The main disadvantages were that the small holes easily blocked up, necessitating continuous sweeping of the roof, and the sheep were not thoroughly wetted to the skin all over. For these reasons the system never became widely popular, and was not considered to comply with the legal dipping requirements of most of the States concerned.

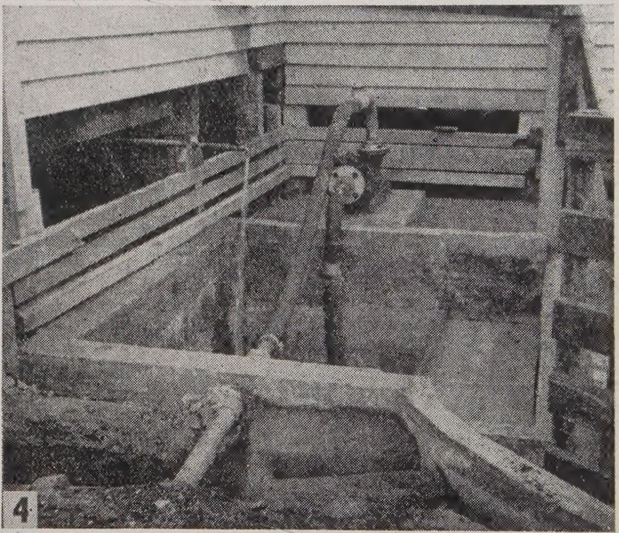
Power spraying is quite a different proposition, and here an engine-driven centrifugal pump is used to deliver a large volume of dip under considerable pressure from specially-designed spray nozzles. With the pressure available it is an easy matter to have nozzles on or beneath the floor as well as above and at the sides of the pen, so that the sheep are sprayed from all directions and thoroughly wetted. Dips of this type are comparatively new, and as far as the writer is aware were first placed on the market in Australia—where they were developed—in 1939. Since that time they have made considerable progress, and many improvements have been incorporated, including rotating overhead sprays in place of the original fixed type. Dips of the new type, which are covered by certain patent rights, rapidly became popular, as their efficiency was demonstrated. The dipping regulations were altered in several of the Australian States, to legalise their use, once the authorities were satisfied as

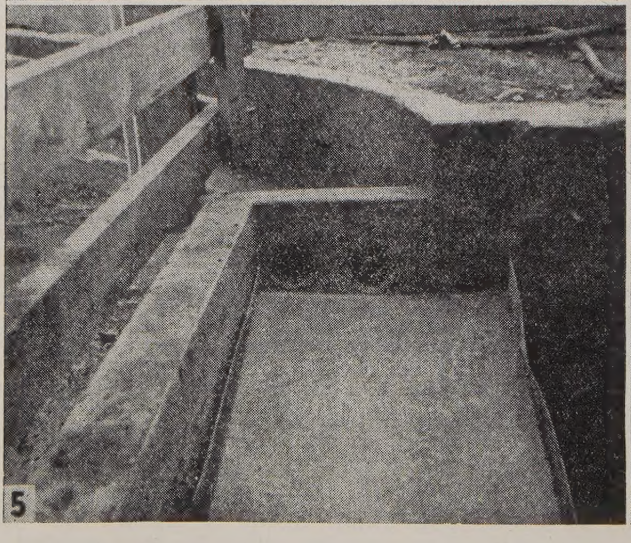
CONSTRUCTION OF THE DIP

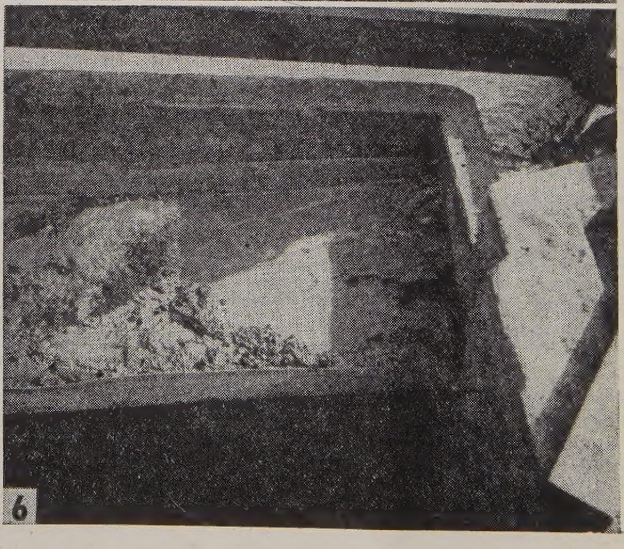












to their effectiveness, and from this stage onwards many hundreds were sold.

In 1941 it was decided to import one of these dips from Australia, to test under New Zealand conditions, but owing to shipping and supply difficulties it was not until the end of 1944 that this dip actually arrived. In a way this was probably an advantage, as the model eventually sent included all the latest patented features and improvements. The dip was finally installed at the Ruakura Animal Research Station, near Hamilton, but unfortunately owing to various unavoidable delays, including the railway strike, the work was not completed until almost the end of the dipping season this year. For this reason the trials carried out were not as extensive as was desirable, but as will be seen from the results the dip seems to have fulfilled the claims originally made for it.

Description of Dip

The general layout and design should be clear from the photographs, particularly the heading block and Fig. 3. Reduced to its simplest terms the layout consists of (1) a circular pen fitted with sliding entrance and exit gates where the sheep are sprayed; (2) one, or preferably two draining pens, of orthodox design; (3) a sump or reservoir to hold the dip and receive the run-off from the dipping and draining pens, via a perforated strainer; and (4) a power-driven centrifugal pump to circulate the dip and force it through the nozzles.

Fig. 1 shows the circular concrete base of the pen, which is 14ft. inside diameter, with a raised outer rim a foot wide all round to retain the dip, giving an over-all diameter of 16ft. This circular concrete floor has a slight fall or slope towards the far side (nearest the woolshed) where there is an opening in the raised rim, which carries the surplus dip back via a channel to the main reservoir, where it is used again. This opening can be seen almost below the right-hand edge of the sheets of iron. The pipe uprights which form the frame can be seen, and several of the curved sheets of galvanised iron are already attached. The inner and outer rings of pipe on the floor, with their attached spray nozzles, can also be clearly seen. The overhead rotating spray arms are plainer in Fig. 2, which shows the completed enclosure. These two arms are attached to a central fitting, which allows them to rotate freely. There is a single central spray nozzle immediately below the rotating fitting, and a multiple spray nozzle at the end of each arm, which in addition carries a special supplementary jet set at an angle which provides the propulsive effort to turn the arms. Alteration of the angle at which this jet is set alters the speed of rotation of the arms.

Fig. 3 shows the general arrangement, with a 400-gallon mixing-tank in the foreground and the main sump or reservoir just showing in the left foreground behind the 40-gallon drum. The size of this reservoir is not critical, but depends to some extent on the number of sheep to be dipped. The one installed, shown in Fig. 4, comfortably holds 800 gallons, and was found quite satisfactory. Its dimensions are approximately 6ft. deep, 5ft. 6in. long, and 5ft. wide, but the shape does not matter much, and a circular reservoir would be just as effective. The capacity of this reservoir was checked by pouring into it measured quantities of water, 100 gallons at a time, and chiselling permanent marks into the concrete, to indicate the levels, which show up in Fig. 8.

Fig. 4 shows the large flexible suction hose leading up to the centrifugal pump and the smaller delivery hose, which connects up with the pipe system leading to the dip. In the foreground is the by-pass channel which is used to divert rainwater away when the dip is not in use. The long strainer can also be seen, which measures approximately 1ft. in width by 6ft. in length. It is of galvanised steel, perforated with a great number of small holes, about $\frac{3}{32}$in. in diameter. Anything passing these holes is too small to block up any of the spray nozzles.

Fig. 5 gives a better view of this strainer, and the concrete channel, which returns the used dip from the circular pen via the two pipes. The run-off from the draining pens also enters at this point, which can be clearly seen in Fig. 6. When the dip is not in use two screwed plugs are inserted in the pipes to prevent rainwater entering the reservoir (which is normally covered over), and this water is diverted through the by-pass previously mentioned. When the dip is in use the by-pass is blocked with one of the screwed plugs. Fig. 6 also gives a good idea of the action of the strainer and how effectively it removes droppings, wool, and other foreign matter which normally contaminate the ordinary type of dip. From time to time this accumulation is swept down to the lower end of the strainer and removed with a square-mouthed shovel.

Fig. 7 shows the completed pipework. The tap on the left is used for filling the reservoir and also the mixing-tank, by means of a hose. The branch pipe from the main supply leads to the pump via the stop-cock, and is used for priming the pump when starting the day's operations. Although this branch pipe is not

" it has
tailed over 13,000
lambs and has
never gone better:
NO DEATHS
after tailing and lambs fatten quicker. Last year we drafted 2035 fats from 1840 ewes, of which 1222 were drafted on 17th December."

The above is from a letter from Mr. Walter Clark, of Woodlands, Otara R.D., who authorises its publication. Mr. Clark's experience is in line with hundreds of other farmers, who find this new, bloodless, humane method of docking with the

Baverstock Searing Iron
is cleaner, safer, and quite as fast as the knife.

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Name ....

Address ....

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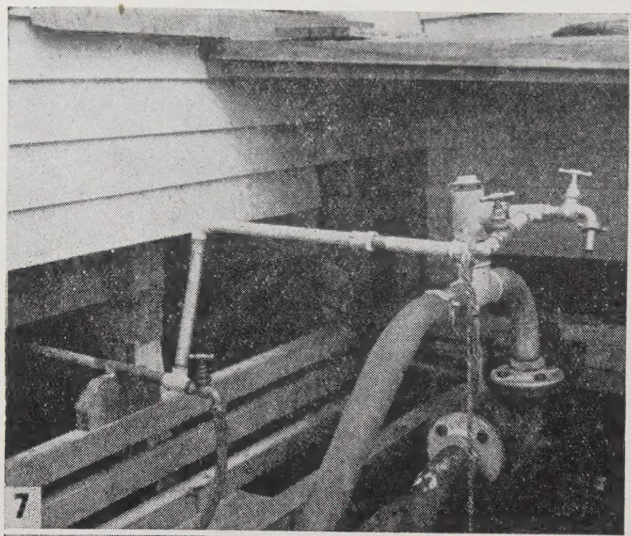
ALEX. THOMPSON & SON LTD.
453 Princes Street, Dunedin.

HOW THE DIP OPERATES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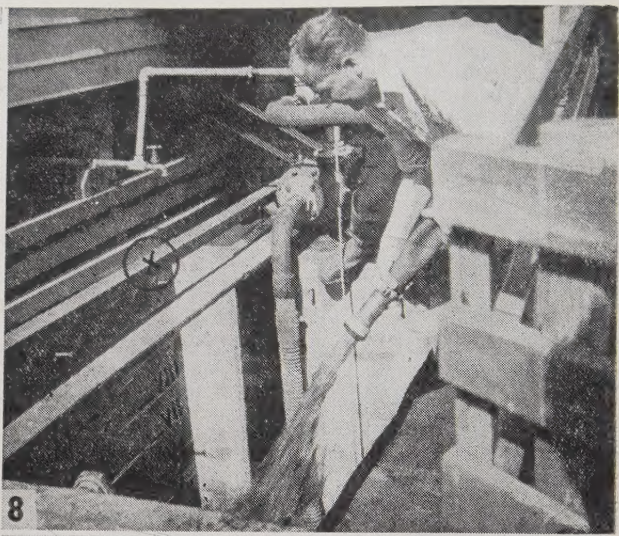
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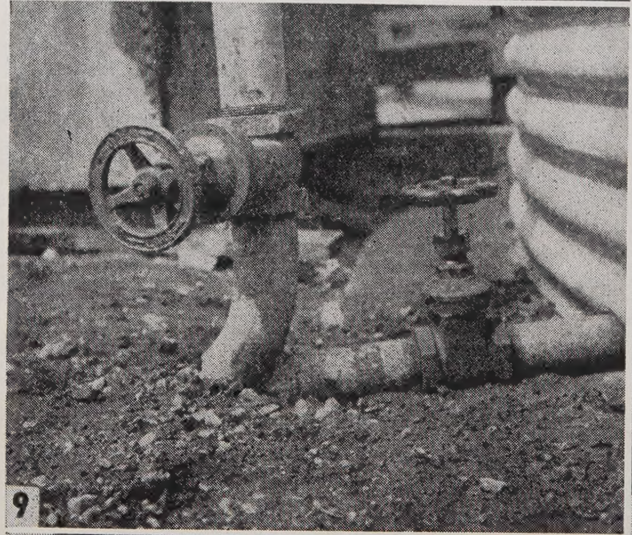
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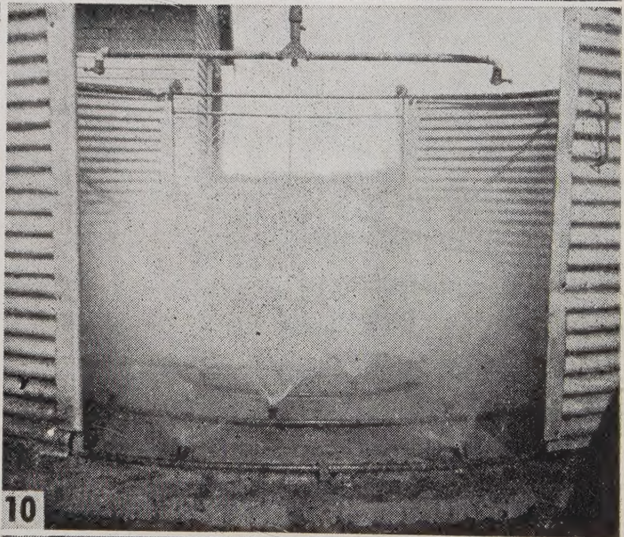
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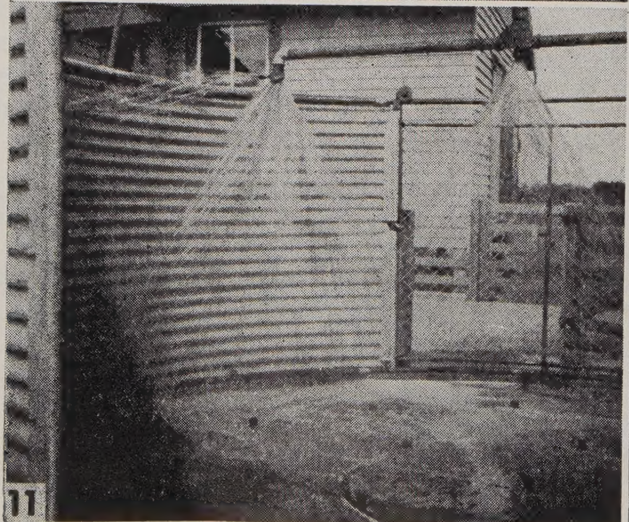
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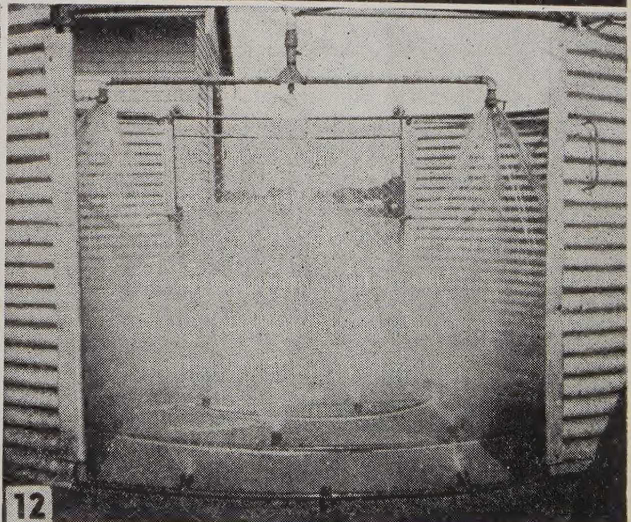
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strictly necessary, it is a great convenience and much easier than priming the pump with a bucket. The other tap on the extreme right is to allow air to escape while the pump is being primed. It serves another useful purpose, in that before and after dipping plain water can be circulated through the system, and a hose attached to this tap while the pump is running provides a high-pressure jet of water for cleaning down the draining pens, etc. The pump is covered by the low lean-to roof at the top of the picture.

Fig. 8 shows another advantage of the system. By disconnecting the pressure hose and starting the pump the dip is circulated at high speed and pressure through the pump, and the powerful stream quickly and thoroughly mixes the dip as shown in the picture. A 5 h.p. electric motor in the wool-shed serves the dual purpose of driving the shearing plant and grinder, and also the pump, by means of the belt shown in Fig. 8, which comes out through a slot cut in the wall. When the pump is shut off while the pen is being filled or emptied the easiest way of doing this is by shifting the belt on to the loose pulley, and this is done by a long extended handle marked X in Fig. 8.

Fig. 9 shows the two control valves. The one on the vertical pipe leads to the overhead sprays, and the horizontal one to the floor sprays. They may be turned on separately or together, as desired, and can both be shut off without stopping the pump. No damage results, as centrifugal pumps have this characteristic that although the outlet is completely shut off while the pump is running, pressure will not build up beyond a safe maximum.

Fig. 10 shows the floor sprays in operation. It will be noticed that the outermost ring of sprays is set inwards at an angle, while the rest point vertically. Very complete coverage is given by these sprays, and when the pen is properly filled with sheep they are thoroughly wetted from below, without much of the spray coming up high enough to get in their eyes and noses. As the nozzles project several inches above the floor, sheep do not tramp on them. In practice it was found most satisfactory to turn on the top and bottom sprays separately, as each set then received the full pressure and volume of dip. The sliding entrance gate, which is hung from grooved rollers running on the top ring of the framework, appears on the right of the picture.

Fig. 11 shows the top sprays working, and really gives an inadequate idea of the big volume of liquid which issues from the multiple nozzle at each end of the spray arm. It will be noticed, however, that complete coverage is obtained—the cones of spray from the nozzles overlapping and also reaching the side walls of the pen. The small supplementary jets, one of which can be seen here, are set to give a relatively slow speed of rotation to the overhead sprays of about five revolutions per minute. This means that each sheep receives only a momentary deluge from above as the spray passes, and there is an ample breathing gap before the next lot arrives. There is no possibility of drowning, as in any of the standard dips, and the behaviour of the sheep seems to indicate that they don't object to the process to nearly the same degree.

Sheep don't, as a rule, display their feelings by facial expression, but when the bottom sprays are first turned on and they get sprayed with "rain" from the ground they certainly look as near to bewilderment as sheep can get.

Fig. 12 shows both sets of sprays operating at once, and the practice was adopted of turning on the bottom set again as well as the top set, just before the sheep went out, to give them a final all-over wetting.

Fig. 13 shows the dip in action, with the overhead sprays working. The man at the control valves is timing the spraying by his watch, and this practice was adopted throughout. A two-minute sandglass would be ideal for this purpose.

Fig. 14 shows the sheep leaving the dip. There is a spray nozzle on either side of the exit gate, which gives them a final squirt as they leave.

Trials at Ruakura

It was mentioned previously that owing to unavoidable circumstances the tests with the dip had to be left almost to the end of the dipping season, and by this time the sheep on the property were carrying fully three months' growth of wool. In a way, this was an advantage, as it gave the new dip an unusually severe test for wetting and penetrating powers. Unfortunately, or perhaps fortunately for the farm manager, the sheep were carrying very few parasites, and to begin with it was impossible to demonstrate actual killing effects. It was realised that given a good dipping material effective killing of parasites would follow, **provided thorough penetration and wetting were accomplished.** At first sight it would seem easy by casual examination to determine if the sheep were wet to the skin, but in practice it was not an easy matter. The moment the wool was parted to see how the dip had penetrated, fluid ran in from the outside of the fleece along the parting, and in any case the hands were wet, and it was difficult to tell, with any certainty, how much, if any, dip had reached the skin. For this reason a more critical test was devised, and a powdered water-soluble dyestuff—methyl violet—was

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sprinkled sparingly right on the skin in a number of "strategic" positions. About a dozen positions were selected on each sheep, including such places as beneath the neck, under the brisket, under the belly and the crutch, in the "armpit," and along the flanks, as well as on the topknot, the back of the neck, the back, etc. The wool was carefully parted in these positions, and a **little** of the dye, which is almost black in the dry state, carefully placed on the skin, where it adhered to the grease present. The wool was carefully rearranged, and the individual staples placed back in their original positions. When these sheep were dipped along with others there was no need to give them a close examination afterwards, for they showed large and obvious purple splotches in **all** the areas where the dye had been placed, proving that the dip had reached the skin and the dye.

Tests were made with different lengths of immersion, and it was found that two minutes on the bottom sprays, followed by two minutes on the top sprays, were ample to thoroughly wet crossbred sheep carrying up to 3½ months' growth of wool. Southdowns could be wetted in a minute on each set of sprays, i.e., two minutes in all. As the makers of the dip stress, thoroughness rather than speed should be the objective, and even if the sheep were given half as long again, i.e., six minutes under the sprays, the method would still be quicker than many of our present dipping systems, quite apart from its other advantages. The dip erected at Ruakura is called a "60-sheep model" by the Australian makers, but their estimate is based on Merinos, and it was found during the trials that with the larger Romneys 50 would be a fairer average. The circular pen should be packed reasonably full for the best results, and the number the pen actually held varied from 40 very large-framed Romneys to 85 lambs.

Speed with Efficiency

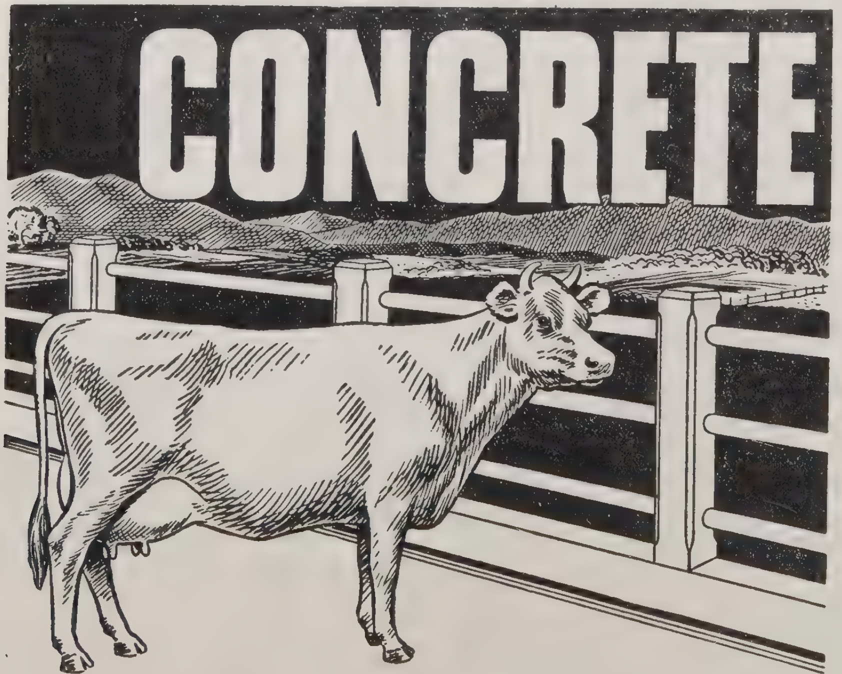
Approximately 2,900 sheep and lambs on the Ruakura farm were dipped, using a powder dip, and it was found that the dipping cycle averaged six minutes—a minute to fill the pen, four minutes under the sprays, and a minute to empty. This worked out at 500 thoroughly-dipped sheep per hour—a figure which could not be equalled by any of our present dipping installations, with the possible exception of some of the larger types of long-swim dips, very few of which are being built nowadays.

Although the general efficiency and particular advantages of the rotating power-spray dip had been demonstrated by the time the Ruakura sheep had been dipped, it was still felt that it would be desirable to try it out on sheep heavily infested with parasites. The local Inspector of Stock, Mr. G. R. Mackintosh, was able to locate a pen of old ewes which were very heavily lice-infested and carrying, in addition, a number of ticks. Fifty-nine of these were transported right to the dip by truck, to avoid the possibility of infesting the Ruakura sheep, and given the standard treatment of four minutes under the sprays—two bottom and two top—again using a powder dip. As these ewes were very thin, there was no difficulty in getting them all into the dip at once, and after sufficient time in the draining pens they were carted back by truck to an isolation paddock.

Mr. Mackintosh followed up the results of the dipping, and it was found that all lice had been killed within 30 hours of dipping, when the first inspection was made. At this stage some of the ticks had been killed, but some were still alive. These ticks would either be freshly-hatched ones or more probably simply those which had not fed since dipping, for, unlike lice, ticks are not killed simply by contact with a standard dip, but only when they ingest it when feeding. (With a quick-acting dip containing derris, or similar rotenone-bearing substance, the ticks are killed in a similar manner to the lice, i.e., by contact with the dip). At the second inspection, 72 hours after dipping, all the remaining ticks were dead, so the ultimate results could be considered 100 per cent. effective.

Spray Dipping Advantages

In the revised edition of bulletin No. 181 on sheep dipping the advantages claimed for the power-spray



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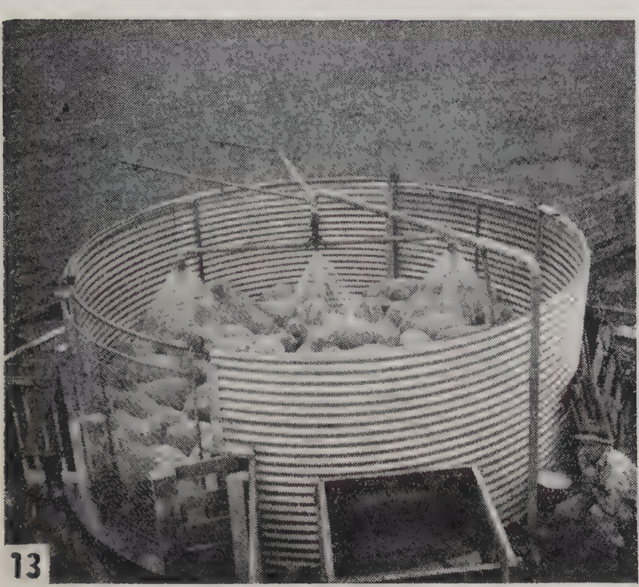
DIPPING IN PROGRESS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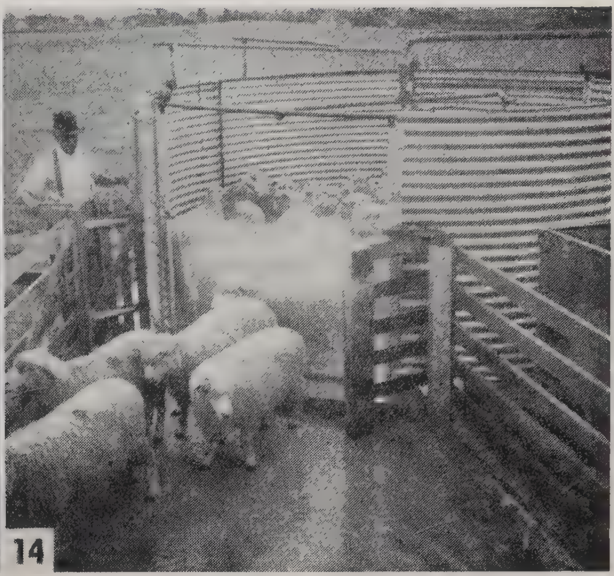
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system of dipping were set out. Now that the tests at Ruakura have been carried out, it is possible to give at first-hand experience under New Zealand conditions.

(a) The sheep are not knocked about; consequently losses are kept down to the bare minimum. Even low-conditioned sheep and ewes close to lambing could be safely dipped if necessary. Many of the usual risks associated with dipping valuable stud rams are eliminated.

(b) As the sheep received no rough treatment or sudden plunge into the dip, they offered little objection to dipping, so the amount of labour required was greatly reduced, and nobody even "got a sweat up." A man and a boy can easily work the dip, and even one man with good dogs would not find it difficult. The sheep enter easily, as the exit gate (which is directly opposite the entrance—see Fig. 13) is of cyclone wire, and the sheep in the draining pens act as decoys, being in full view of those entering. Fig. 14 shows the leisurely fashion in which the sheep are leaving the dip; in fact, this might almost be classed as a disadvantage, as they have to be chased out.

(c) Dipping is rapid compared with present methods; 500 sheep per hour were dipped without difficulty. Four sizes of this type of spray dip were manufactured in Australia, rated at 30, 60, 90, and 120 sheep capacity. The model tested is a 60-sheep one, so with the largest model it would be fair to assume that upwards of 1,000 sheep per hour could be dipped.

(d) Economy in the use of dipping fluid, which can be used to a much lower level than with any of the standard types of dips. It was found that dipping could be continued till just over 100 gallons were left. With an improved design of reservoir with a sloping floor, it is probable that dipping could continue even longer before the foot-valve was exposed, thus allowing the pump to suck air.

(e) As the design necessitates and incorporates efficient screening, it removes much foreign matter from the dip (see Fig. 6), and reduces the risk of dip stain to a minimum. It can handle any type of dip equally well, and the continual circulation is a great advantage with powder dips, as it keeps them thoroughly mixed and the powder particles in suspension. As already mentioned, the pump can be used as a very convenient and thorough method of carrying out the initial mixing of the dip (see Fig. 8).

(f) The first cost is no higher than that of a standard type of dip of comparable capacity. The approximate landed cost in New Zealand of the framework, entrance and exit gates, galvanised iron, all piping hoses and valves, and centrifugal pump, would be in the vicinity of £110 at present. To this must be added the cost of the concrete work and fences round the draining pens, but these costs vary so much according to circumstances, e.g., the availability of shingle and sand, whether farm labour is used, etc., that no useful estimate can be given for this part of the job. No doubt those interested could make their own estimates on the following basis:—Area of concrete in floor of circular pen, approximately 200 sq. ft., all at least 4in. thick and preferably reinforced. The rim, which is 1ft. wide, is included in the above area, but this concrete will be at least 6in. thick, giving a total of about 75 cubic feet. Area of concrete in draining pens, approximately 350 sq. ft., at least 3in. thick, and preferably reinforced, plus a raised rim all round, requiring about 92 cubic feet in all. The reservoir is of the dimensions given above, and has reinforced walls 6in. thick.

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The total quantity of concrete for this will be approximately 90 cubic feet. plus, say, another 10 cubic feet of concrete for the gutter and its raised rim. The total quantity of concrete required for the whole installation is, therefore, about 267 cubic feet, or very nearly 10 cubic yards.

(g) This type of dip would seem to be ideally suited for installation at public saleyards, or as a community dip for the use of a number of small flock-owners, on account of its speed of operation and the fact that each user could put in just enough of the dip of his own choice to suit his requirements, and would have the great advantage of starting off with clean dip. This principle applies also to the use of the dip for large flocks, where the reservoir is allowed to become almost empty after dipping, say 1.500 sheep, and is then quickly **replenished with fresh dip** already prepared in the mixing-tank. This would be in marked contrast to present practice with many large flocks, where thousands of sheep go through the dipping bath, which is **topped up** from time to time and ultimately resembles pea-soup in consistency, and liquid manure in colour and smell.

Disadvantages

The tests at Ruakura did not reveal any serious disadvantages, and these should have been evident after dipping 2,900 sheep. It is only fair, however, to take the following into account:—

(a) Some form of motive power is necessary to drive the pump. On many properties this would present no difficulty where a suitable engine or electric motor was already available, or the power take-off from a tractor could be used. The difficulty would arise only where the existing engine or motor was of insufficient power to drive the pump, as a minimum of 5 h.p. is required for this type of dip. The small 30-sheep model requires only 4 h.p., but the large 120 model required about 12 h.p. for the pump.

(b) There is, of course, the cost of oil fuel or electricity to be considered, but as dipping even a large flock by this method is relatively quick, the cost will not be a large item, and is offset to a considerable extent by economies in other directions.

Discussion

It would appear from the evidence of the trials that power-spray dipping has much to recommend it, particularly for larger flocks. For a single small flock the original outlay might be considered rather heavy, but if the flock-owner arranged to dip for several of his neighbours, the installation would certainly be justified, and with a reasonable charge for this service the first cost would be liquidated in a few years. In Australia well over a thousand of these power-spray dips had been installed by early 1944, and the makers still had many orders waiting. At the moment none of these dips is obtainable for export to New Zealand, but it is probable that a limited number may be available in the course of the next six months.

Under the terms of the present Stock Act this type of dip does not strictly comply with the legal definition of dipping, which means "plunged or immersed." The results of the Ruakura trials have been sufficiently convincing, however, to warrant the general use of the method, and it is unlikely that any action would be taken against anyone using the power-spray system before a suitable amendment is introduced to legalise the new method.

It may be of interest to anyone considering the installation of a power-spray dip to replace any of the standard types to note that a good deal of the existing installation can be salvaged if of suitable type and in good condition. The original dip (or a portion of it in the case of a long-swim) can be used as the reservoir, and the existing draining pens can frequently be incorporated in the new layout. Where the original draining pens are very large one of them can be used as the foundation for the circular pen and the other kept as it is, or subdivided to continue in use as a draining pen. Where an adaptation of this sort is possible considerable saving can be made.

Acknowledgments

Thanks are due to the Public Works Department's staff in Hamilton for assisting in building and testing the dip.

All photographs are by the author.

Pig Broadcasts

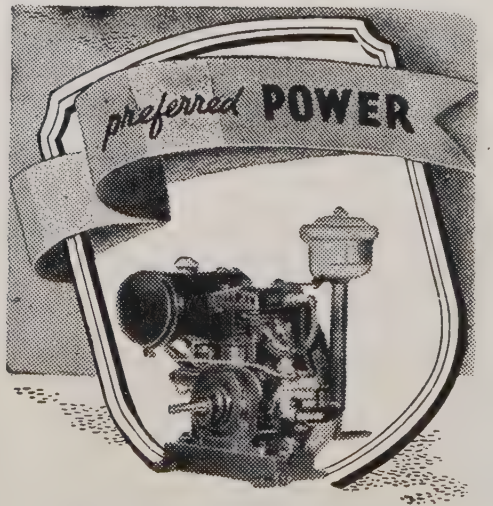
UNDER the auspices of District Pig Councils broadcasts will be delivered in November as follows:—

Auckland—1YA, on November 21, at 7.15 p.m., "Winter Feeding of Pigs," by H. E. Clark, Supervisor, Auckland District Pig Council.

Christchurch—3YA, on November 15, at 7.15 p.m., "Feed Supply for Second Litters," by H. McIntosh, Supervisor, Canterbury District Pig Council.

Wellington—2YA, on November 20, at 7.15 p.m., "Costs of Production," by D. H. M. Sorensen, Supervisor, Taranaki District Pig Council.

Napier—2YH, on November 8, at 7.15 p.m., "Losses from Live Weight to Cured Bacon." by H. Hopkins, Supervisor, Tairawhiti District Pig Council.



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STUDIES IN FARM MANAGEMENT

A Heretaunga Plains Farm

THE rich alluvial silt lands of the Heretaunga Plains, of which Hastings in Hawke's Bay is the centre, lend themselves to diversified farming, writes R. P. Hill, Fields Instructor, Hastings. The soils are fertile and easily worked, and the climate—with dry cold in the winter with plenty of frosts and clear sunny days, a good spring and early summer rainfall, and a dry, sunny, late summer and autumn—is specially suited to the cultivation of all kinds of crops and their safe harvest.

THE Heretaunga Plains, which include an area of approximately 85,000 acres, were described in the "Journal" of December, 1944, page 521. Briefly the flat lands round Hastings extend from the sea between Haumoana, Napier, and Petane, inland to the low hills at Taradale to Fernhill, Ngatarawa, and Paki Paki, and back to Havelock North. While the bulk of the plains consist of deep alluvial soils, there are considerable areas of light, sandy, and in places shingly soils, while the recently-reclaimed inner harbour at Napier of some 7,000 acres adds materially to the area of sandy silt marine soils. Much of the land of the plains was swamp, and drainage has played an important part in the preparation of the alluvial land for cultivation and production. The plains are extremely well roaded, and the land is devoted to fat lamb raising, orchards and small fruit growing, grass seed production, dairying, vegetable culture, and wool production. The average annual rainfall is approximately 32in., January, February, and March being usually the dry months.

A very extensive fruit and vegetable canning industry has been developed at Hastings in recent years, and during the war a dehydration plant has been in operation, while large quantities of fresh vegetables have been shipped from the deep-sea port of Napier. Many of the farmers on the smaller holdings have taken advantage of these developments, and the following description of the operations during the past season on one such holding will serve to indicate the possibilities of diversified farming on the large area of fair to good cropping lands of the plains.

Farm and Equipment

The farm consists of 132 acres, the soils varying from sandy silts to clayey silts. The land is all flat and easily drained, and is subdivided into 16 well-sheltered paddocks. A plentiful water supply is derived from artesian bores and natural streams. The holding is well equipped with farm buildings, including a cow shed, wool shed, dip and yards, an implement shed, and hay sheds. Electric power is available. The farm is specially equipped for cultivation work and the harvesting of crops, and in addition to two draught horses for odd work the main tractive power is supplied by two tractors, a 30 h.p. wheel tractor and trailer and a 12 h.p. tractor together with a farm truck. In addition to a full range of cultivation equipment for the preparation of the land and sowing of crops, inter-row cultivation is provided for with the cultivators, and a potato digger and hay press are also available. Grass seed harvesting with the header harvester and hay harvesting with the hay loader are done on contract.

Farm Labour

The farm is worked by the farmer, his wife, and one permanent hand, who assists with all farm work. For special rush harvesting periods the services of two neighbours are available, and this service is repaid in kind. In addition to activities on his own property, the owner finds time to contract for potato digging in his district and for other contract work with his equipment.

Livestock

A herd of 43 cows is milked by machines, the majority of the cows being Friesians. Three bulls are at present on the property. The butterfat average for the herd is about 300lb. per cow, and the butterfat production this season will be in excess of 12,500lb., giving a gross return at 1/7 per lb. of approximately £1,000.

Several sows are kept, the litters being sold as baconers and heavy stores. Some weaners are disposed of in the spring when prices are attractive. The pigs are fed on skim-milk and vegetable and crop waste. No figures are available for pig returns this season.

A stud of 110 Southdown ewes and two pedigree rams of this breed are carried, the average lambing percentage being well over 100 per cent. Some selected ewe lambs are required for replacements, the balance being sold in a lucrative market. This season 38 ram shearlings were sold for £9 9s. each, realising £359, and the wool clip was worth £60.

Gross returns from livestock, now a minor part of the farming operations, were in excess of £1,500.

Farm Management

Harrowing of pastures to spread animal droppings is regularly practised. Topdressing of cow pastures with the limited supply of phosphatic fertiliser available is carried out, 1cwt. per acre being used this year. Ample supplies of lucerne hay are harvested for winter feed, and winter grass is saved by closing paddocks in the autumn. No root crops are grown for

VIEWS OF THE FARM

Left—The homestead is small, modern, and well equipped. Right—Ample shelter belts.

Left—Portion of the dairy herd. Right—The small woolshed, yards, and sheep-dipping plant.

Left—Harvesting canning peas with a hay lifter. Right—The early bean crop drilled in 21in. rows.

stock, but silage is made from the green haulms of pea crops grown for canning. Normal practice is to winter the dairy herd on the farm, but during this winter 35 cows are being grazed out for some weeks and 200 breeding ewes have been bought to take their place; these will be retained until sold with their lambs in the spring.

After shelling the pea vines are made into silage.

Cropping

The interesting and important feature of this farm from the financial aspect is undoubtedly the cropping programme, which has been developed in recent years to take advantage of the demand for special vegetable crops for canning, dehydration, and for chilling for export.

Canning Peas:—

Thirteen acres of canning peas (William Massey) were grown. Sown in August (which is early for this district), the crop was harvested at the end of November. It was a late spring, such a crop being harvested usually by mid-November. The harvesting was done by contract. After cutting with the mower the green peas are lifted with a hay loader into a truck and carted to the mechanical viner owned and operated by the canning factory. Here the vines with peapods attached pass through a machine not unlike a big grain thresher and the green peas are shelled out, the vines and empty pods passing over an elevator to be carted away to be made into silage on the farm. The whole operation of sowing, inter-row cultivation, and harvesting in the case of the pea crop being done mechanically, a minimum amount of labour is required. Whereas an average crop of peas for canning will yield about 2 tons of shelled peas per acre, the crop in this instance was sown early so that the land could be got ready for another crop, and the yield was only 1 ton per acre. At 2½d. per lb. at the cannery, a gross return for the 13 tons of £303 6s. 8d. was obtained. Harvesting costs in the field for cutting and loading are £3 per acre and for carting and shelling £5 per acre.

Beans:—

Immediately following the harvest of the pea crop the land, which is left quite clean, was ploughed and disced and a crop of Black Valentine Dwarf beans was sown. On February 18 a start was made to harvest green beans from 6 acres of the crop for the local market. Picking was done by hand on contract, the pickers going through the crop once. It is found that it does not pay with the late bean crop to pick more than once, and the picking is generally light, the crop being left to grow on for seed. The 6 acres yielded 4 tons of green beans per acre, which were readily sold at 2½d. per lb., returning £525 gross. The cost of picking by contract was 1d. per lb. The remaining 7 acres not picked over, together with the 6 acres picked, were later harvested in early April for seed and stacked. The yield of seed is estimated at 20 bushels per acre, a light crop due to the harvest of green beans. The average crop on this land is from 30 to 40 bushels. The Black Valentine seed is worth 22/6 per bushel, so that it is expected this 13-acre paddock will produce a further £292 10s. gross, a total of over £1,100. After the harvest of the bean seed the paddock was sown in certified ryegrass for the production of seed next summer.

A further 4½ acres of table beans were grown for an earlier crop in another paddock, producing 15 tons of beans, which also realised 2½d. per lb., a gross return of £350.

The bean crop is stacked before threshing.

Potatoes:—

A total of 16 acres of potatoes were grown. An area of 9½ acres was planted in the spring in Aucklander Short Top and harvested in February. A total of 145 tons of table potatoes was dug from this crop and sold at £11 per ton, giving a gross return of £1,595. A further area of 6½ acres of Dakota Red was grown. This crop was badly affected by late blight, and only 3 tons per acre were dug in March and sold for £10 per ton, giving a gross yield of £195. The potatoes are planted with a mechanical planter and dug with a digger, which reduces the labour costs as much as possible. After digging the crop is picked up by contract at 1/- per cwt. As soon as the potatoes were lifted the land was sown in Algerian oats for greenfeed in the winter. This land will be planted to cabbages in the spring.

Certified Perennial Ryegrass Seed:—

Some 20 acres of pasture sown to certified seed the previous autumn was closed for a seed crop of perennial ryegrass in early November. The crop was heavy, and with wet weather in December much of it was badly lodged at harvest time in early January. After mowing the crop was harvested with the pick-up harvester. In spite of the bad season and difficult harvest conditions, the crop yielded 38 bushels per acre of machine-dressed seed. The 760 bushels was sold for 15/6 per bushel, giving a gross return of £589. After threshing the usual practice in the district was followed of taking up and baling the straw, which, if not required on the farm as additional feed in a difficult or severe winter, is always saleable.

Lucerne:—

There are two paddocks of lucerne on the farm, one recently sown down after cropping and the other an older stand invaded by grasses and weeds to some extent. The 12 acres of the younger stand had produced 60 tons of baled hay from four cuts up to April of this season. The other area is used mainly for hay and grazing as greenfeed for the herd, the production of hay in this case being much less. Some of the surplus hay, which is worth £6-£7 per ton, will be sold in the winter.

Other Crops:—

Small areas of cash vegetable crops suited to the district and which find a ready sale under present conditions (and which will no doubt be required for one purpose or another after the war) are grown as payable side-lines. This season these included 3 acres of carrots (Chantenay) sown in August and harvested in December. The crop, though a light one, yielded 15 tons, which were sold at £31 per ton, giving a gross return of £465. Harvesting, which was done by hand, is relatively costly with this crop, but labour is available if the crop is early.

Two acres of cabbage were planted out in September and lifted in December and early January. The variety was Copenhagen Market and the yield 22 tons per acre. The crop was sold for £10 10s. per ton, giving a total return of £462 gross. This crop is a cheap one to grow and harvest and the net return is particularly good.

Finally, 3 acres of tomatoes were attempted, but wet weather in December and early January hindered spraying operations and blight was troublesome. Usually tomatoes can be grown in this district with little, if any, spraying. This season the tomatoes were not worth harvesting.

From the foregoing it will be seen that an energetic farmer with a small property on these fertile Heretaunga Plains has plenty of scope for diversification in his farming activities, and, under present conditions, exceptional opportunities in the profitable use of his land.

While it is regretted that no details of production costs are available, a general knowledge of such costs in relation to the various farming operations will indicate that there should be a considerable margin of profit in the gross returns as summarised below:—

SUMMARY OF GROSS RETURNS.

	£	s.	d.
Dairying, plus returns from pigs ..	1,000	0	0
Sheep, plus returns from surplus ewe lambs	419	0	0
Peas, from 13 acres	303	6	8
Beans, from 13 acres	525	0	0
Beans, from 4½ acres	350	0	0
Potatoes, from 16 acres	1,790	0	0
Grass seed, from 20 acres	589	0	0
Carrots, from 3 acres	465	0	0
Cabbage, from 2 acres	462	0	0
Tomatoes, from 2 acres	——		
	£6,105	6	8

These figures and the management practices described show that there is scope on the Heretaunga Plains for something more than just dairying or fat lamb production.

* * *

WEEDS.

Weeds, their means of dispersal, and cost and methods of control are dealt with in Bulletin 202, "Weeds," which is available free from offices of the Department of Agriculture. Much farm land has deteriorated through lack of control of weeds, and this bulletin contains invaluable information on the recognition of weeds and their properties.

* * *

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Growing Canning Peas in Hawke's Bay

FAR from being confined to domestic and commercial gardens, green peas in the Hastings district have assumed the proportions of a major crop, writes G. A. Blake, Instructor in Agriculture, Hastings. Peas now play an important part in the farming economy of that area of the Heretaunga Plains in close proximity to the town of Hastings, due entirely to the marketing facilities provided by the local canneries.

FROM a small beginning in 1936, 100 acres of peas were grown in 1937, the whole crop being absorbed by the canneries. The acreages have progressively increased up to 300 acres sown in 1944, and contracts for almost 400 acres have been let for the 1945 sowing season. With the provision of more machinery at the canneries arranged for, it is confidently expected that up to 1,000 acres of peas for canning will be grown within the next few years, thus providing one more avenue for the rehabilitation of our returning men.

Importance of Crop

Peas, being legumes, play an important part in the maintaining of the soil fertility, and are recommended to those farmers who concentrate on fat lamb raising and grass seed production. They are an ideal crop to follow a worn-out pasture requiring renewal, as their early maturity and removal allow ample time for the preparation of the land for the sowing of certified grass and clover seeds, which in turn increase the carrying capacity of the farm.

Preparation of Seed-bed

Although peas are not deep rooters, deep ploughing is practised in an endeavour to obtain a seed-bed free from weed seeds. They thrive on a variety of soils, but prefer a free-draining, fertile soil that does not dry out during the summer. The selected area should be heavily disced prior to ploughing in July or August, while all subsequent cultivation should aim at producing a fine, firm seed-bed, with a complete absence of clods. Rolling or boarding prior to sowing helps to produce the required conditions.

Place in Rotation

Like most crops, peas do best after grass, but this place in the rotation is selected more to avoid weed growth than for any other reason, because of the impossibility of continued after-cultivation. Only those areas known to be fairly free from weed seeds, or land that has been in grass for several years, should be selected for this crop, as the presence of weeds in the mature crop causes uneven ripening and difficulty in shelling. Where excessive weed growth is present at maturity hand picking must be resorted to, with its consequent loss of yield and higher costs.

Time of Sowing

September is the main month for sowing, but successional sowings may be made for several weeks. Some sowings are made in August, where it is intended to follow this crop with beans, but the yields are usually lighter.

Before any sowings are made **it is essential to have a contract with the canneries,** who will then advise the approximate date of sowing in order to obviate simultaneous harvesting on several areas.

Varieties

In this district William Massey and Canner's Perfection are the main varieties used, but some crops of Greenfeast are also sown, more particularly where the pods are picked by hand, but the yields from this variety do not compare favourably with those from the first two mentioned. These are sown at the same time, but the William Massey variety matures about 14 days earlier than the Canner's Perfection, thus giving a break in the harvesting and an interval during which the canneries can handle small or later-sown crops.

Some farmers prefer to grow peas for seed; hence there is always a plentiful supply of local seed for the canning crop.

Seeding Rate and Method

One bag or 3⅓ bushels of seed per acre are sown through every coulter of the grain drill where the crop is to be harvested by machinery, while 2 bushels per acre are sown in rows 21in. apart where the crop is to be hand picked. This latter spacing allows of inter-cultivation, and is often used where the land is weedy, or where the peas follow some other crop. Care must be taken to ascertain that the drill does not crush some of the seed in the sowing gear, a tendency present in some makes of machinery.

No treatment of the seed for disease or germination is necessary, the main reason for unsatisfactory crops being excessive soil moisture. Crows and smaller birds often pull out considerable areas in the crop, so the seed should be sown about 2in. deep to lessen this risk.

Manuring

Manure is not generally used with this crop, the soil fertility being high enough, especially after grass, to produce a good crop, but the application of 1½ to 2cwt. of superphosphate should assist in maturing the crop more quickly than if no manure is used.

Subsequent Cultivation

When the peas are from 3in. to 4in. high they are harrowed with a light tine harrow in the same direction as sown to kill any weed seedlings that may have appeared. A small percentage of peas are pulled out, but the maxim is:—"Never look behind, or you will stop the harrowing." Even though some of the plants appear to be loosened, they recover quickly when weed competition has been eliminated. For crops sown in rows

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●

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HAWKE'S BAY CANNING PEAS

Left—Pea crop being harrowed on October 9 when 3in. to 4in. high. Right—Harrowed and unharrowed portion of a field of peas.

Left—Cutting and raking the peas into windrows in the one operation. Right—The vines are tipped at the viner.

Left—The shelled peas are caught in the boxes shown and sent to the canneries. Right—A stack of silage made from the pea vines.

horse hoeing can continue until the plants fall over, when it is usually found that some hand weeding in the rows is necessary.

Harvesting

In the inaugural years labour for picking row-crop or weedy areas was supplied by the canneries, and up to 600 pickers have been employed at one time. The policy is now changed, and where hand picking is the method of harvesting the grower must supply his own picking labour. This work is usually done by contract pickers at approximately 1d. per lb., or up to 1/6 per kerosene tin full.

By far the greater proportion of the crops is harvested by machinery, requiring only two or three men to handle the whole crop. Harvesting commences when the bulk of the pods are well filled, and slightly riper than preferred for domestic use, but here again the harvesting date is advised by the canneries to avoid congestion at the viners. The usual procedure is to cut two or three swaths with a power mower, to which has been fitted sufficient "pea-fingers" to lift the crop so that the knives do not cut any pods that may be lying on the ground. When cutting the knife-bar presses hard on to the earth, and often gives the impression of working in the soil, hence the necessity for a fine seed-bed free from clods.

The swaths are then raked into windrows with a side-delivery rake, this operation usually being done at the same time as the mowing, by attaching the rake behind the tractor. At times raking is dispensed with, and the swath is loaded direct on to the lorry, but this method often results in the lorry wheels crushing many of the pods.

The windrows are then loaded on to a lorry by a hay-loader, and carted to the viner, where the load is tipped, the lorry returning to the field for another load. High cartage costs make it uneconomic to grow peas for canning at a greater distance than 10 miles from the viner, those outside this distance usually concentrating on the production of seed for next season's sowings.

The pea crop is forked into the viner, where it is threshed by beaters, the peas eventually finding their way into boxes, in which they are conveyed to the canning factory. The refuse—tops, pods, and weeds—after passing from the viner is either carted back to the farm or converted into silage near the viner. Some hundreds of tons of silage are thus available for winter feeding.

Where the pea crop is hand picked the pods are delivered to the canneries in cases to prevent sweating and facilitate packing, and are then fed into a "sheller" or "podder," the pods being discarded and usually dumped.

Yields

Yields vary up to almost 3 tons of shelled peas per acre, an average crop ranging from 2 to 2½ tons. Payment is made by the canneries on the basis of 2½d. per lb., delivered unthreshed to the viner, so that the direct costs to the grower cease when the load is tipped at the threshing plant.

Harvesting Machinery

For the efficient handling of his own crop a farmer needs a tractor, a power mower fitted with "pea-fingers," a side-delivery rake, and a hay loader. Tip trucks for cartage can be hired. Where the harvesting gear is not grower-owned arrangements may be made to have the crop harvested by a contractor, of whom there are several in the district.

On most farms where pea growing is a permanent feature in the rotation a hay loader is often the only extra equipment needed to handle this crop, the tractor and other implements being previously purchased for the efficient working of the balance of the farm.

Threshing Machinery

The viner or threshing plant is a large stationary machine, usually owned by the canneries and situated in the centre of the pea-growing districts. It reduces long haulages and allows of an extension of the area where pea growing can be carried on profitably.

The "sheller" or "podder" is also cannery-owned, but is situated at the factory, as cartage costs on peas in the pod are not a costly item.

Individual areas under peas vary from a few acres up to 50 or 60 acres, the average being from 10 to 15 acres. Unless a grower has his own harvesting gear, the harvesting of small areas is often difficult to arrange, as contractors prefer large areas with less shifting of their plant, while it is also easier for the canneries to arrange delivery from a few large areas than a multitude of small ones.

Costs and Returns

The following costs and returns of an area of 9 acres of Canner's Perfection peas, where the crop followed grass and where weed control was good, have been supplied by Mr. G. Roach, of Hastings. All the work was done by a contractor, but the total costs of harvesting are much higher than the average, because showery weather delayed the work, during which periods wages and truck hire continued. Many peas were also left on the ground through attempting to harvest when conditions were unsuitable.

COSTS.	£	s.	d.
Rent of land	45	0	0
Ploughing, working down, and sowing at £3/15/- p.a.	33	15	0
Seed	41	11	4
Harrowing once after germination	2	5	0
Cutting, raking, and loading, 22 hrs. at 27/6 per hour	30	5	0
Truck hire—84 hrs. at 12/6 per hour	52	10	0
Other labour, plus holiday pay	9	3	4
Harvesting "smokos" (morning and afternoon teas)		17	0
Supervision expenses of grower (approximate)	3	0	0
Total costs on 9 acres	£218	6	8
Total cost per acre	£24	5	2
RECEIPTS.			
21 tons — cwt. 1qr. 14lb. shelled peas at 2½d. per lb.	£490	8	9
Gross return per acre	£54	9	10
Net return per acre	£30	4	8

This average crop, occupying the land for only 4 months, indicates the returns that can be expected from a machine-harvested area of green peas for canning purposes.

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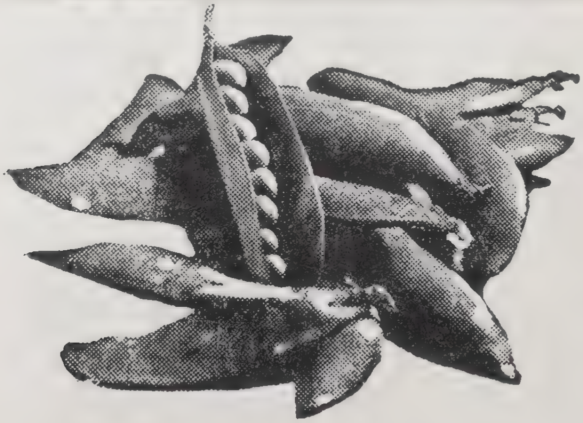

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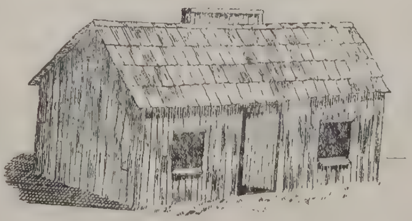
FARMING IN NEW ZEALAND

The Farm Home

NEW Zealand has not developed any particular style of housing for farm homes, and although many homes are well designed and equipped, there are also many that lack modern conveniences, and others that have been built from plans designed to suit urban rather than rural requirements. This article by Norma Metson, Rural Sociologist, Department of Agriculture, Wellington, traces the general development of farm housing in the Dominion, discusses some of the more important aspects of planning and siting farm houses, and outlines the information which needs to be collected to help in planning homes which will be suitable for the family and business requirements of the farmer.

EVEN those who quarrel with the definition of a house as "a machine for living in" must admit that this phrase summarises very effectively an important set of ideas. For a house should be planned in accordance with the needs of the family which is going to live in it; its rooms should be designed as a convenient frame for the activities which are to be carried on in them. The farm house in particular needs this type of functional planning, because in addition to being the family home, it is the centre of many tasks directly connected with the work of the farm. Even where there has been no deliberate "planning" in the modern sense of the word, the different types of rural life and the use of available materials have produced distinctive and appropriate homes, ranging from the felt tents of the Asiatic nomads to the mellow brick manor houses of Elizabethan England. Today, many new kinds of materials are being developed, it is relatively simple to transport them, and it is easy for people to become familiar with the architecture of other countries, so that traditional local styles are being modified, or even disappearing altogether. In the areas which are more advanced, economically and socially, the best features of the older style may be kept, and successfully incorporated in houses of a newer and more scientific design, or they may be completely discarded as too old-fashioned, to be replaced by the modern or modernistic. On the other hand, the break with tradition may lead to buildings which are nondescript in appearance, and have no particular suitability for their purpose. New Zealand, for various reasons, has not developed any really satisfactory style of domestic architecture, nor is there at present much difference to be observed in homes in different climatic regions, or on different types of farms, apart from the inevitable distinction between properties where the importance of the house and its surroundings to family life is recognised, and those where it is ignored.

THE FIRST SHELTERS



Lack of stone and bricks, the traditional English building materials, was one of the first difficulties encountered by the New Zealand colonists, and there are frequent accounts in pioneering reminiscences of "huts built with the aid of friendly Natives," and using, naturally, the materials of which the Maoris made their own whares. European customs, however, demanded some modification of design, to allow for interior partitions and more height, space, and light. The following account, dated 1840, is typical:—

> On arrival we found temporary shelter in a tent made of ship's sails, divided into sections by piling up boxes and hanging blankets. Here we had to sit for days with umbrellas up to keep off the rain. Later a wattle and daub hut was built with the aid of friendly Natives. This hut was of the usual type erected by the first settlers. The walls were of flax leaf and toi-toi laced in and out of a framework of saplings, and then daubed with clay. The fireplace was of stones, the chimney of supplejack plastered with clay. Windows were of calico or wooden shingles, with flax mats to cover the floors. The scanty furniture was contrived out of boxes. When her husband apologised for the shortcomings of this whare, the woman whose home it was to be reassured him, saying, "What more do I want? I can walk about in it without bending. I can cook inside if required."*

Other materials used in these whares were wheat straw, tree ferns plastered with mud, raupo, and totara bark.

The period of fusion of Maori and pakeha design was, however, brief. The whares were regarded as purely makeshift by most of the settlers, and it was not long before the abundant timber resources of the country were utilised and houses of pit-sawn boards or split logs erected, usually two rooms with a wide, open hearth. These

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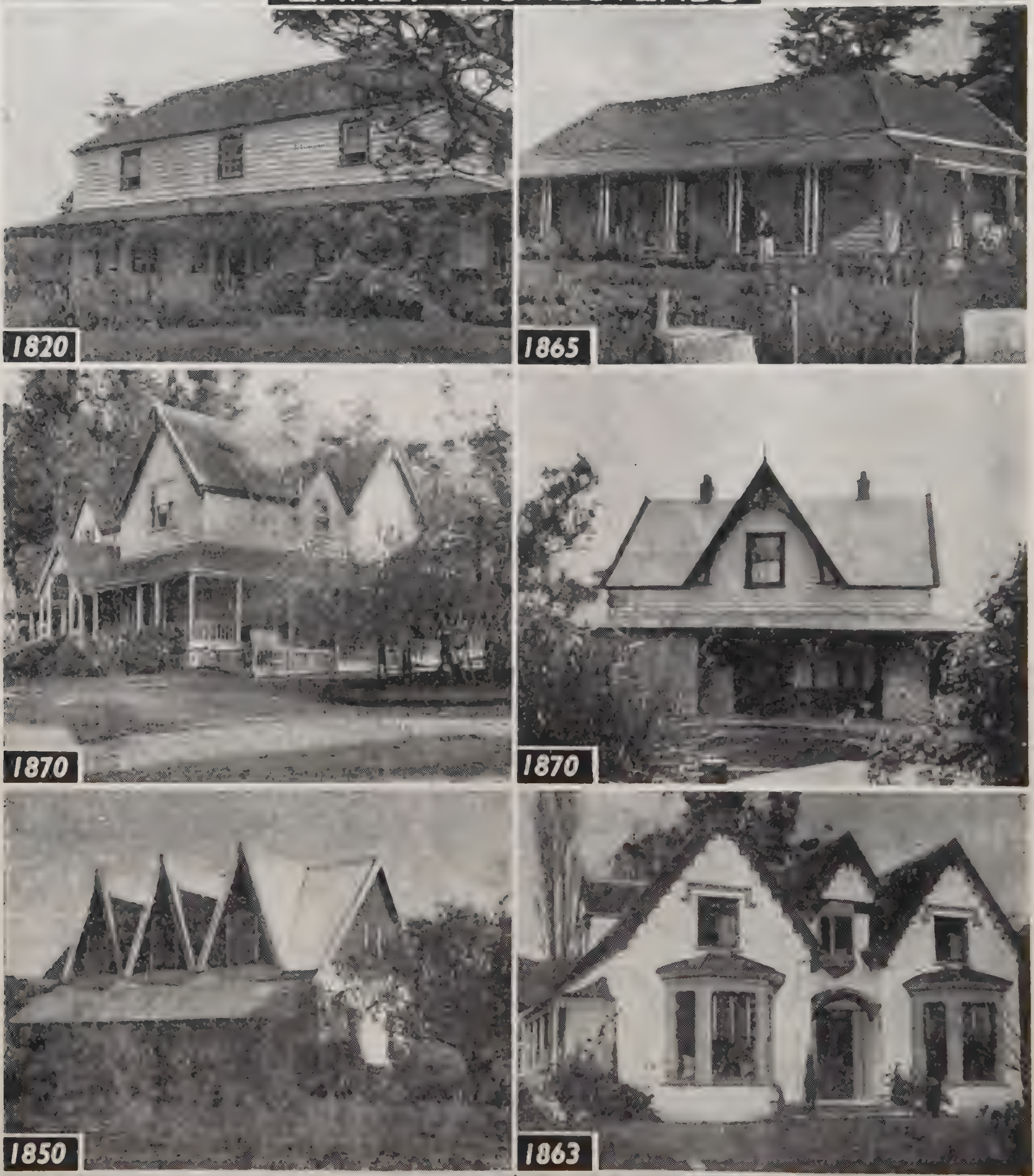
* "Brave Days"—W.D.F.U. Collection of Pioneering Reminiscences, p. 87.

EARLY HOMESTEADS



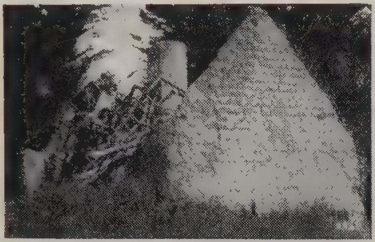
These are homesteads built before 1870. In every case but one corrugated iron roofing has replaced the original tiles, shingles, or slates. The simplicity of early design, well-proportioned and based on straight lines, is illustrated in the first two examples, and a very large proportion of the early homesteads were of this type. The two-storeyed building erected in 1820 was the first wooden house in New Zealand. The steeply-pitched gabled roofs and ornamental details are typical of a slightly later period. Most of these early homes were built of wood, but a few were of stone or clay.

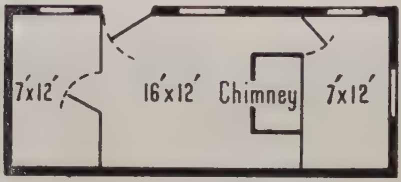
rooms were often added to later, and, as the first dwelling for a farm in the making, the type has persisted.

In some areas, Canterbury particularly, lack of timber caused the development of sod and cob houses, which made use of the only plentiful materials, the earth and the native grasses. Rectangular sods were cut and used as bricks, bonded together with a "mortar" of earth and water, for the building of walls. The roof was a wooden framework thatched with tussock, snowgrass, or reeds. The walls were smoothed inside and whitewashed, and the earthen floor tramped hard. For cob houses the earth was puddled with water and the mixture packed into a wooden boxing, which was afterwards removed, leaving solid walls; or moulded into large bricks which were left to dry in the sun and then built up into walls, again cemented with mud. A proportion of chopped tussock or flax was sometimes added to the cob mixture. A further variation was the "slab, cob, and ricker" construction — the space between an outer wall of timber slabs and an inner lining of saplings was filled with cob.

As with the whares there was a typical plan, a main room which had a door in the centre of one wall, with a window on either side of it; and a huge cob chimney with an open hearth taking up most of another wall. Opening from this room were smaller apartments, sometimes arranged in a straight line, sometimes at right angles or as lean-tos. In some of the larger houses of this type an attic was built under the roof for extra sleeping or storage space, with a ladder or staircase from one of the lower rooms leading up to it.

Early Shelter



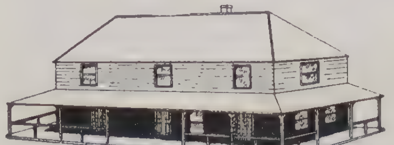


The first shelters of the early settlers were usually two-roomed whares, built of the local materials most readily available. In bush country split slab walls were roofed with shingles; sods and clay bricks were used in low-rainfall areas, and straw thatch. Above is a sod hut near Ashburton, with a plan of its rooms. To the right, a slab whare in a North Island bush area.

A few settlers brought wooden houses with them, complete with panes of glass for the windows, and bricks for the chimney. It was supposed to be possible to erect these in a few days, but several complaints are recorded that weeks rather than days were required.

THE HOMESTEADS

After the earliest pioneering days more substantial homes appeared. In some cases the settlers were able to build fine homes soon after their arrival; in most the transition from hut to homestead was more gradual, keeping pace with the expanding size of the family and the progress of their fortunes. These early homesteads, built by the wealthier settlers and carrying on so far as was possible in a sparsely-settled country the traditions of English country houses, possessed many pleasing features. They were well and soundly built, some few from brick and stone, but the majority from wide weather-boards with shingle or tile roofs, later replaced by corrugated iron. In exterior appearance and interior finish they maintained high standards of craftsmanship and good design. The sites were chosen with care, particularly in relation to sun and view, and gardens were planned to form an appropriate setting for the house. One unfortunate feature, however, was that many of the trees planted for shade and shelter grew, in New Zealand's milder climate, much more rapidly and much larger than was expected, so that they tended to crowd in upon the houses, making them damp and gloomy even in summer, and constituting a real danger in gales and thunderstorms.

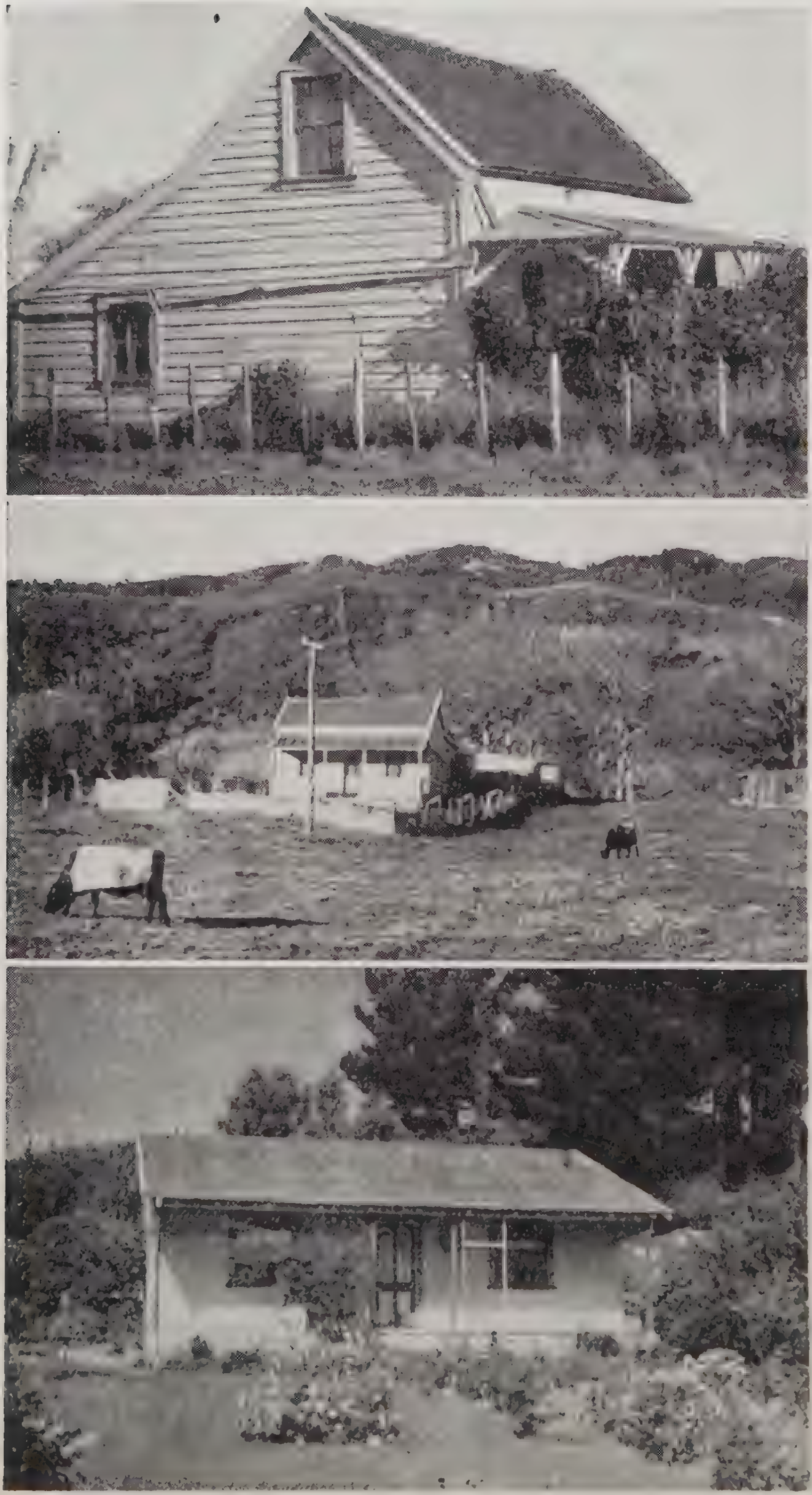


Such houses were large—12 to 20 rooms being usual for the two-storeyed types and up to 10 for the one-storeyed. In addition, there were often attics and outbuildings of various kinds, while wide front halls, folding doors between rooms, and verandahs connected to the living rooms with french doors increased the space available for living and particularly entertaining. Indeed, it was not uncommon to have one room large enough for, and known as, a "ballroom." All the rooms were large by present-day standards—bedrooms 16ft. square, living rooms 20ft. x 24ft., and the big kitchen was usually supplemented by a scullery almost as big, and one or more pantries which were rooms in themselves. The height of these rooms —a 10ft. to 12ft. stud—and their many windows added to their air of spaciousness. Wide verandahs extended along two or three sides of most houses, but balconies upstairs were not so common. In addition to a back, front, and sometimes a side entrance opening into passages, many rooms had french doors which opened directly outside or on to the verandahs.

Many of the larger two-storeyed houses had two or even three staircases. The main stairs, usually one long straight flight, led from the front hall to the main rooms above; the back stairs — darker, narrower, and often twisted — opened from a back passage or kitchen and gave access to back bedrooms or attics. Occasionally, in accordance with the English tradition, the back premises — kitchen, scullery, storerooms, and servants' quarters — were shut off from the rest of the house by heavy doors or a long passage.

Indeed this relegation of the kitchen and working areas to the back of the house, almost invariably the south side, and so cold and sunless, was the chief defect in the planning of these homes. This was accepted in an age when domestic work was regarded as something rather degrading, to be performed by servants and hidden as far as possible, but this is no longer the case. Under modern conditions it is the homemaker herself who spends most of her time in the kitchen, which frequently is also the mealroom and part-time living room for the whole family. In the same way the very large kitchen and adjoining service rooms, which provided necessary space for several workers, mean merely extra and unnecessary steps for someone working alone. Lack of

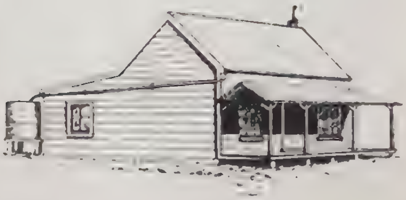
COTTAGES



These three cottages are typical of many thousands built from the early days to the present. They have two or four rooms in the main part of the house, a verandah across the front, and a lean-to kitchen at the back. Sometimes the roof is high enough for an attic bedroom to be built. This is the kind of cottage described by Hursthouse.

domestic help, smaller families, high building costs, and other factors make very large houses impracticable or undesirable under modern conditions, but there are many characteristics of these early styles which we could retain with advantage, and the one-storeyed and smaller two-storeyed types need little modification to make them conform to modern standards.

THE COTTAGE



Although the large homesteads, with their size and dignity, dominated the early scene, they were not by any means the majority of the homes. Most people advanced from a two-roomed shelter to a cottage, which might be no more than two rooms and a lean-to, or, on the other hand, might be a substantial 6- or 8-roomed dwelling. Hursthouse, whose comprehensive survey of New Zealand life was published in 1861, describes such homes as follows:—

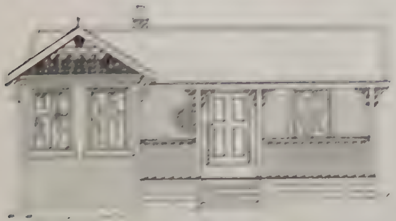
> Most of the country or farm houses are wooden buildings of the one-storeyed verandah cottage type. In this land of brick and stone we are apt to picture a wooden cottage as being a poor, flimsy band-box sort of thing. But in such a climate as New Zealand's these cottages may be made very comfortable dwellings, while neatly-painted, backed by trees, or embowered in gardens, their verandahs covered with jassamine, rose, peach, or vine, they often present an air of rustic elegance and sparkling beauty to which many of the stuccoed villas, and "bell and brass knocker" deformities of English villages can make no possible pretensions.

The details he gives of building costs are very interesting, and "A substantial verandah cottage, 32ft. square, containing say two front rooms 14ft. x 18ft. and two back rooms 14ft. x 14ft., with a kitchen detached (amply large enough for a family of half a dozen) might now cost from £150-£200 if made of wood. Cob would be about one-third cheaper."

Hursthouse's plan is typical, but there were several variations of this type. Depending on their construction, the original two rooms might form either the lean-to or part of the main portion of the larger house. Sometimes the new house was never properly built, but two more lean-to rooms were put in front of or behind the original lean-to. Sometimes, if the family was prospering or the original home was hopeless, a whole new place was built. In some districts, particularly around Nelson, two-storeyed cottages were characteristic, the attic space under the pointed roof being utilised for bedrooms by building out dormer or gable windows, but they still remained cottages.

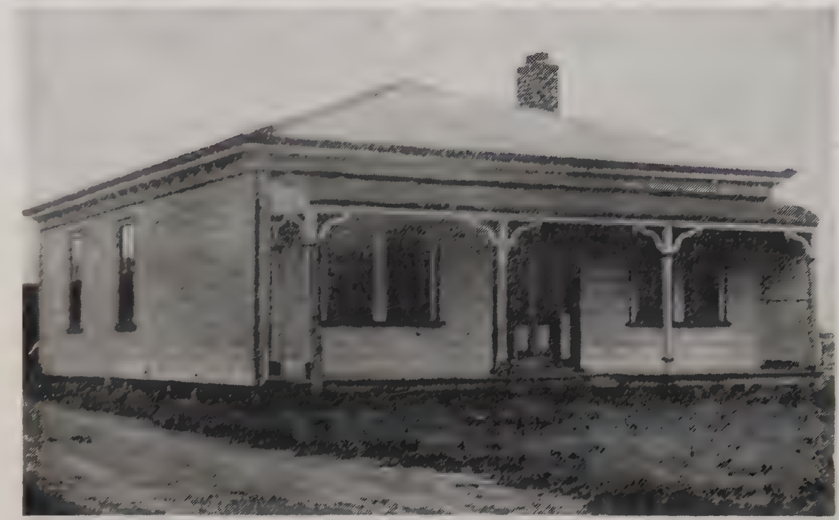
Homes like these have been built in considerable numbers, right up to the present day. Room for modern conveniences, such as bathroom or washhouse, is usually made by extending the lean-to area a little further, and one end of the verandah may be closed in to form a sunporch, but the essentials remain the same. Large groups of such houses, built 60 or more years ago, are now deteriorating rapidly, due to the effects of the weather and borer infestation, and are among those homes most urgently in need of replacement.

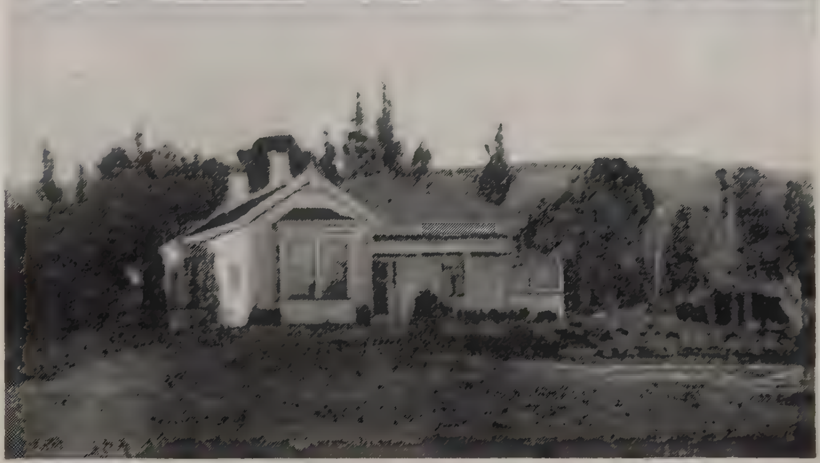
TOWN HOUSES

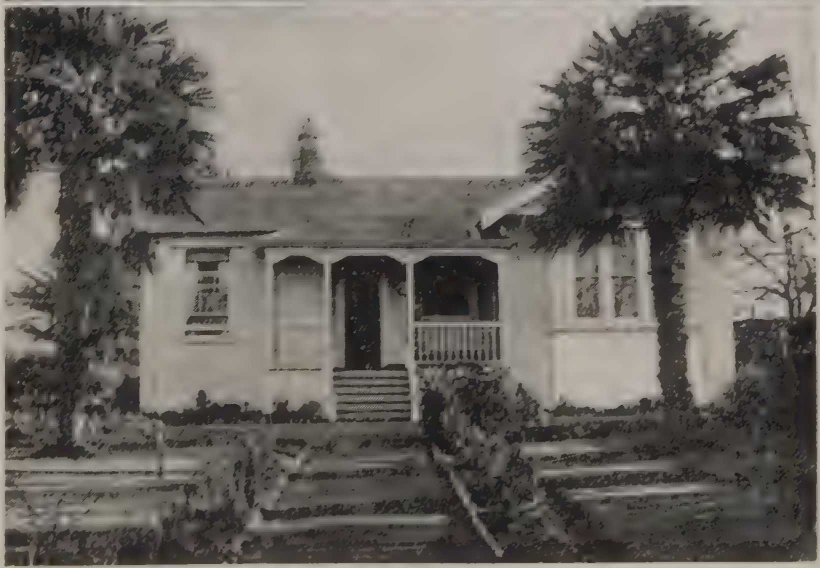


In later building some modifications of style are found. Particularly around 1900, when farms were well established in many districts and transport easier, the desire for better houses and town comforts led only too often to the erection of "town houses" quite unsuitable for country conditions. Standards of design in particular deteriorated during the late Victorian period, and many New Zealand houses of this era approached the "bell and brass knocker deformities" which Hursthouse deplored. Some of the least-desirable features of such houses were the small windows; the small narrow front verandah; the disregard for sun in planning so that main rooms often had all windows facing south; lack of sufficient space and shelter in the kitchen back-door section of the house; and far too much unnecessary decoration on the outside of the house. After the 1914-18 war villas went out of fashion, and a bungalow style was adopted for almost all new dwellings. Sash windows were replaced by casements, verandahs by sunporches; rooms became smaller and lower, roofs less steeply pitched. In more recent years a few modernistic houses have also been built. The best examples of present-day farm housing combine good functional planning with a simple and pleasing exterior, but too many new houses lack one or both of these essentials.

HOUSES BUILT ABOUT 1900

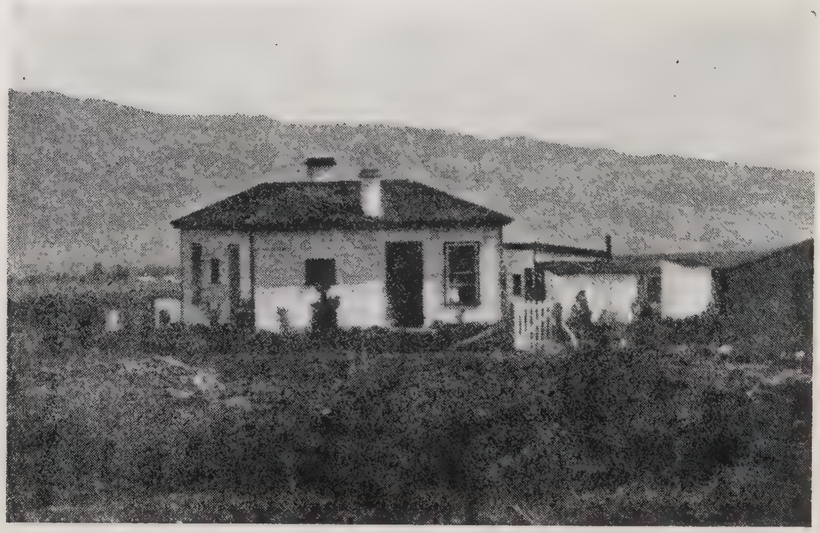


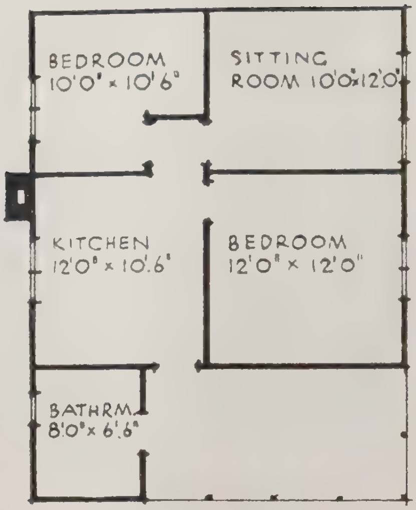


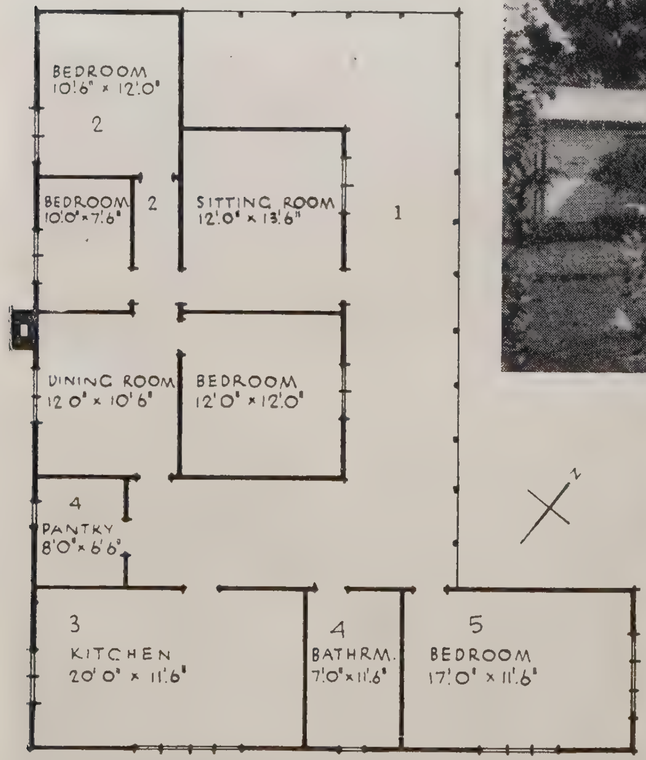


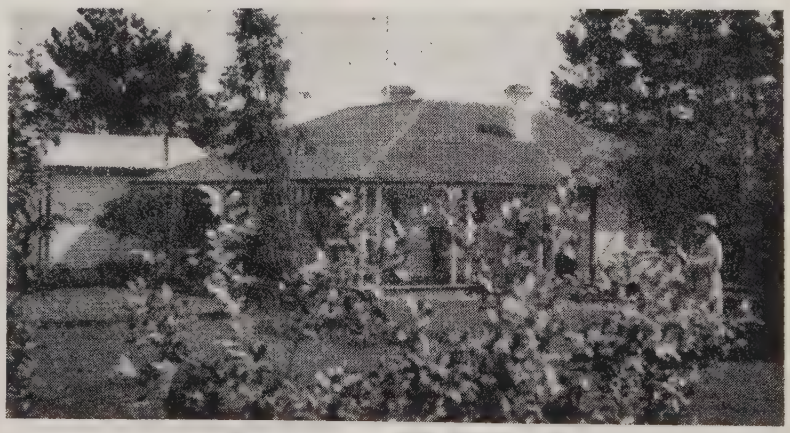
Many houses built around 1900 were square and box-like, with a straight central passage. The style with the bay windows and shortened front verandah was also common, and many of the unsuitable "town houses" were of this type.

GROWTH OF A FARM HOUSE



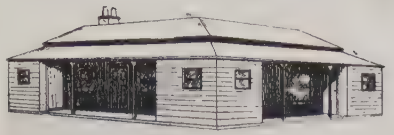

BEDROOM 10'0" × 10'6"
SITTING ROOM 10'0"×12'0"
KITCHEN 12'0" × 10'6"
BEDROOM 12'0" × 12'0"
BATHRM. 8'0" × 6'6"


BEDROOM 10'6" × 12'0"
2
BEDROOM 10'0"×7'6"
2
SITTING ROOM 12'0" × 13'6"
1
DINING ROOM 12'0" × 10'6"
BEDROOM 12'0" × 12'0"
4
PANTRY 8'0"×6'6"
N
3
KITCHEN 20'0" × 11'6"
4
BATHRM. 7'0"×11'6"
5
BEDROOM 17'0" × 11'6"



Farm houses increase in size as the family grows and prospers. The photograph at bottom right shows a house of the type with two additional rooms at the verandah corners. The others are "before and after" studies of a house which has been added to several times over a period of years; plans showing these additions are shown adjacent to the photographs. The order of the additions was: (1) verandah built round house; (2) passage extended, additional bedroom built, sitting room enlarged; (3) new kitchen built; (4) new bathroom built, former bathroom converted to pantry; and finally (5) an additional bedroom built.

ADDITIONS



It is natural for a farm house to grow. A large and fully-equipped house is too big a strain on capital resources for most people to afford in the initial stages of developing a property. Nor can a farm family pack up and shift to a larger house as the family increases. Provision for more accommodation and the installation of additional conveniences are two of the biggest problems of farm housing. The form of the additions naturally depends on what the original house is like, and unfortunately too many farm houses were, and are, built in such a way that extra rooms cannot be made to look as though they really belong.

Apart from the growth of the cottage which has been outlined above, growth occurred in other ways. In the square, one-storeyed house type, with verandah on three sides, the commonest method was to build in part of the wide verandah. One or two additional rooms would thus be made, usually at the front corners, or right at the back. A parallel to this is found at the present day when many people are building in the ends and corners of open verandahs to make sunporches. Lean-to construction was also widely used, particularly at the back of the house, for adding bathroom, washhouse, storage space, or an "outside room" for the accommodation of farm help. It was not uncommon for the new set of living rooms and bedrooms to be built in front of the original house, which would then be used for a kitchen and storage area for a varying period of years, before being replaced by a new structure built along the back of the other new rooms.

New materials were frequently used to make additions. The original house roofed with shingles, the lean-to with corrugated iron, wooden porches and rooms built on to cob and stone, and brick and corrugated iron chimneys replacing clay are all found. Houses were sometimes enlarged by building on another half or whole storey, especially if there was considerable space under the roof which could be converted into extra bedrooms by building gables, but two-storey houses, except in the old homesteads and some of the larger modern homes, are not common in New Zealand country districts.

MODERN HOUSING

Modern developments in housing are of extreme importance for the farm home. Emphasis on functional planning—building a house round the people who live in it and their activities—focuses much-needed attention on how best to combine the farm house as the family home, and the farm house as part of the business and productive organisation of the farm. Electricity, almost universally available, means new freedom in planning rooms and the introduction of labour-saving devices. Prefabrication offers a possible solution to some of the problems of building in remote areas, and of making essential fittings less expensive. New materials such as reinforced concrete panels for structural use, and wall-board, enamel paints, and plastic for interiors should reduce costs and increase convenience.

Because of war conditions very many new houses in New Zealand have suffered from shortage of some desirable materials and equipment, and from high building costs, which frequently make compact planning and minimum area an economic necessity. It is probable that shortages of materials, particularly imported ones, will continue; and as New Zealand timber supplies are limited the possibilities of using other materials need to be investigated. Cob, for example, is suitable for dry areas, and cob houses can be made both durable and attractive.

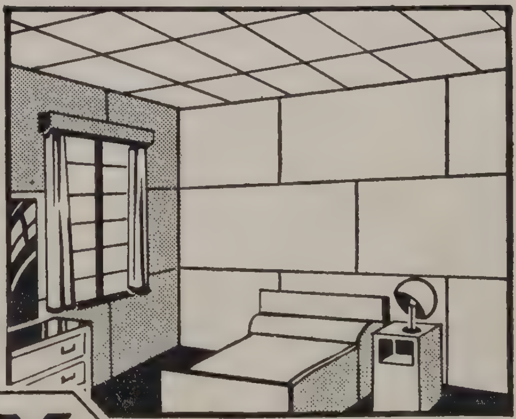
At present the essentials of a modern house are found in its equipment rather than its structure. No house can be considered modern which does not have electric light and power available; a kitchen with stove, sink, and adequate storage space for food and utensils; a fully-equipped bathroom and washhouse with running water (hot and cold) and drainage, and an indoor lavatory and sanitary sewage disposal.

Electricity brings a solution to many of the most pressing problems of making a farm home convenient and easy to run. If it is used for cooking and water-heating, it may modify the whole design of the farm kitchen. By providing a convenient method for heating the other rooms of the house it considerably increases their usefulness and comfort, although open fires are so popular that they are likely to remain the chief method for heating the main living rooms. Fuel stoves, too, remain in favour, especially in districts where wood is plentiful on the farm, but an electric cooker, if it can be afforded, is often regarded as a desirable supplement.

Prefabrication, if widely adopted, will lead to some standardisation of design and fittings, especially those for bathroom and kitchen. Careful consideration should therefore be given to the correct location of these and other rooms in relation to the special needs of farm homes.

FARM HOUSING REQUIREMENTS

Standards for farm housing should be just as high as those for urban housing, but the actual requirements for the two types are not the same.



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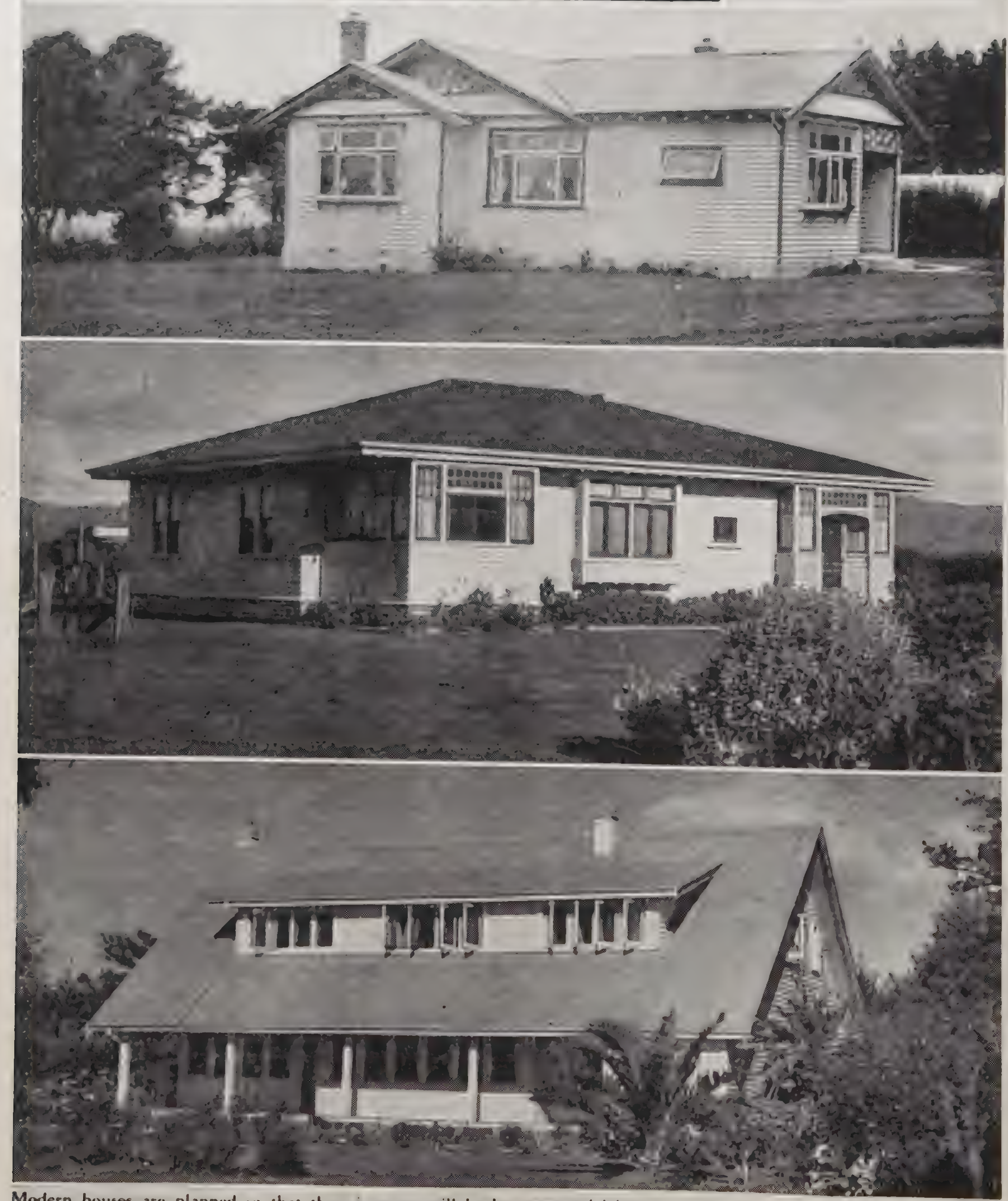
MODERN HOUSES



Modern houses are planned so that their interiors will be compact and labour-saving. The rooms are usually small, and built-in fittings reduce the space required for furniture. Ceilings are low, and windows spread horizontally instead of vertically—a sunroom with one or two walls almost entirely windows is a popular feature. Most new houses are one storeyed and wooden, but two storeys are found in some larger homes.

The farm house is the scene of many productive domestic activities. Large quantities of food are stored, prepared, cooked, and preserved for winter use. Some poultry and dairy products are usually handled, and all meals have to be provided for those members of the family, and possibly employees, who are working on the farm. The back and possibly side entrances are used far more frequently than the front, and it is most important that they should be placed conveniently in relation to the farm drive and buildings. The home is also the business centre, so it must have some place suitable for keeping records and accounts and for business interviews. The cycle of family life must also be considered, because the house is permanently attached to the property and cannot be abandoned for a more suitable one as the family grows and prospers. Farm houses, therefore, should always be planned to allow for additions to be made easily, or so that some of the rooms can be shut off if not needed. Accommodation within the house for farm workers or domestic help is frequently necessary.

Finally, farm homes are often isolated, so that most of the family's social and leisure activities are carried on in and around the home, particularly in the winter. Isolation will also make transport of material and labour for building and upkeep expensive, and this may be a determining factor in the choice of original building materials. Also it means that problems of water supply, sanitation, and power must be solved on an individual basis.

These general requirements must be translated into terms of the arrangement and use of rooms in the house, and the provision of specific equipment and facilities, together with such basic essentials as sound construction and sufficient total space to prevent overcrowding. A kitchen-work area, a living room, and three bedrooms are really necessary to allow for working, living, and sleeping for a family with children. In a smaller house possible alternatives are to combine kitchen and living areas in one large room or to make provision for sleeping in the living room.

The first essential of the kitchen-work area is that it should be large enough to cope with the maximum demands made upon it. These include cooking and serving meals for the whole family and any regular workers, with greater numbers at seasonal rush periods; storing adequate supplies of foods which cannot be purchased frequently, or which have been preserved for winter needs; providing space for small children to play, and casual visitors to sit; and a hundred other things ranging from keeping chickens warm to doing the family washing and ironing. The kitchen itself is primarily a place for dealing with food. It may contain everything that is necessary or may have in addition any or all of the following:—Pantry, storeroom(s), scullery, and dining-room. It is not usual to have copper or wash-tubs in the kitchen in New Zealand homes; if a two-purpose room is necessary, it is more often a combination of washhouse and bathroom. It is much more desirable, however, if at all possible to have a separate bathroom equipped with bath and basin. If necessary. this can be made to open on to the back porch. Space for storing working clothes and gumboots and such things as small tools and garden supplies, and a place for workers to wash before coming into meals, are all essential near the back door. There are several ways of providing this. The washhouse may be enlarged so that, together with a small back porch, it is big enough for all these uses. The washhouse may be left small, and a large enclosed back porch provided or a separate "utility room" may be planned for.

An adequate supply of hot and cold water, properly piped to and drained from kitchen, bathroom, and washhouse, is the greatest possible labour-saving device. Adequate water also makes it possible to have a w.c. and septic tank. If there is only one w.c. it must be placed so that it can be reached from outside without going through the house—off the back porch or in a compartment in the washhouse are the usual locations. A second w.c. in the house is an added convenience; if it is necessary to save space it may be put in the bathroom. Storage for a reasonable quantity of fuel should be provided under the same roof as the house, and there should also be a large meatsafe in a cool and convenient place. A roof built out over one entrance to the house so that a car can be unloaded under cover is desirable, though not essential. It is essential that a reasonable area round the back door, and paths to nearby outbuildings, should be hard surfaced, preferably concrete, and that a length of clothesline should be accessible from them. There should also be some provision for drying clothes indoors, especially if there are children in the family.

A small house cannot afford space for a separate dining room; in most farm homes everyday meals are served in the kitchen, and if other dining space is wanted, the living room is used. This arrangement is not practicable, however, if the living room is a long way from the kitchen and is of the "parlour" type. In some larger homes living and dining areas are combined in one large room, but separated by a partial wall, sliding doors, or an L-shaped arrangement. This type of plan is very suitable where there is a considerable amount

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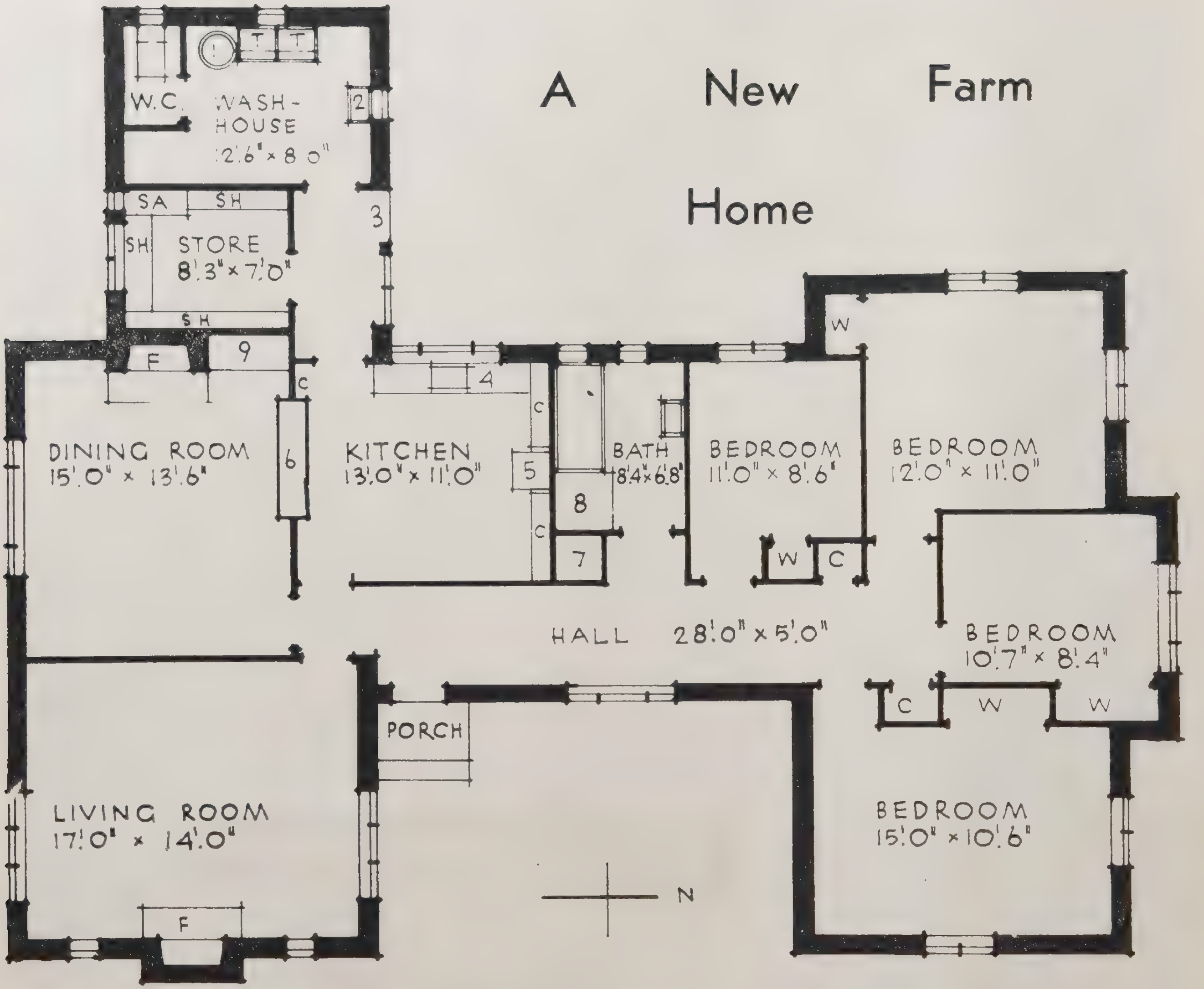
A New Farm Home



THIS house was built only three years ago, and is an example of thoughtful and successful modern planning for a large farmhouse (total floor area nearly 1,500 sq. ft.).

The house is planned in units, rather than individual rooms, so that the sleeping rooms are in one wing, the living rooms in another, and part of the service area in another, with the kitchen and bathroom in the central position. This means that different activities can be carried on without conflicting, and yet the rooms are grouped in such a way that there is no lost space.

The arrangement of the back porch and washhouse is convenient for workers coming inside, as the washhouse includes a hand basin and lavatory and there is space for storing coats and boots. The porch is closed by a sliding glass door, and there are windows along the wall, so there is protection from wind but no exclusion of sun or light.

The large storeroom, which includes a safe, is near the kitchen, and is particularly suitable for the needs of a country home. The kitchen is also the passageway between the back and front of the house, but the two doors are both at one end of the room so that the main work space is not broken by cross traffic. Ample cupboards are built on two walls and the sink bench has drawers, cupboards, and bins below it. Above the sink an extensive window gives a view of distant hills, as well as of the back garden and yard. The stove, an electric heat-storage model, is set in a niche between cupboards, and has an airing rack built above. There is space for a table for everyday meals, while the location of dining and living rooms in relation to the kitchen makes it easy to serve meals when entertaining visitors.

The bedrooms have capacious built-in wardrobes and are near the bathroom.

The siting of this house to secure sun in the different rooms at the times when it is most usually desired presents some difficulties. The arrow indicates the actual situation. Alternatively, with minor alterations in the plan, the front of the house, or the living and dining rooms, could face north.

This house applies general principles of planning which make for livability and convenience to meet the needs of one set of family circumstances.

NOTE: The windows on the south wall of the living room are not included in the present plan, but the owner intends to have them put in.

KEY: W = Wardrobe. C = Cupboard. F = Fireplace. T = Tubs. Sh = Shelves. Sa = Safe. 1 = Washing machine. 2 = Hand basin. 3 = Sliding glass door. 4 = Sink bench, bins, etc., below. 5 = Stove. 6 = Built-in fittings, cupboards in kitchen, sideboard in dining room. 7 = Electric hot water service. 8 = Shower. 9 = Built-in seat.

of entertaining. A good fireplace in the living room is essential. Bedrooms should be arranged to secure privacy, sunshine, and convenient access to the bathroom. Adequate wardrobes should be built in. It is very desirable that bedrooms for older children should be large enough to allow for activities other than sleeping. If it is necessary to provide accommodation for a farm worker in the house, it is convenient for that room to have a separate entrance.

Sunporches are a popular feature in any home, and depending on their location, and the needs of the family, are used as additional sleeping or living areas. A sunporch is useful where there are small children, because it makes a convenient nursery and play space, and where there are elderly people who must sit about a lot and require warmth; in colder climates it is valuable in making the best use of sparse winter sunshine. If, however, the whole house is planned with due regard for sun and plenty of windows, a sunporch may not be as useful as an extra room. Verandahs are more appropriate to warm than to cold districts, as an open verandah on the sunny side of the house helps to keep the rooms cool in summer, and, provided it is sheltered from wind, it is a good place to sit in winter sunshine. A shady verandah is a pleasant place to sit in summer, but as farm working hours are long and most of the family spend a large proportion of their time outside, extensive provision for outdoor living associated with the house is unnecessary. Back verandahs are, however, extremely useful as passageways to washhouse, storerooms, etc., and as extra working or temporary storage space.

The main factors to be considered in choosing a site for a farm home are: Reasonable access to the road and the rest of the farm; drainage and water supply; shelter from prevailing winds; suitable soil for a garden; sun; view; safety for children. A site on rising ground usually gives the best drainage, view, and sunshine, and is to be preferred unless it has other serious disadvantages.

STATE ASSISTANCE IN RURAL HOUSING[*]

It is interesting to note that the first State assistance to housing, empowered by the Advances to Settlers Act, 1894, "enabled the State to lend citizens £25 to £2,500 to erect buildings on freehold or on Crown Leasehold land which was not urban or suburban, the advance not to exceed three-fifths of the value of the security." Urban and suburban lands were included in 1899. Separate acts in 1905 and 1906 enabled the State to build workers' houses for lease or sale and to make loans to assist workers to build their own homes. The important Housing Act of 1919 changed the administration of State aid to housing by establishing a Housing Board and a Housing Superintendent under the control of the Ministry of Labour. Three major avenues of State activity were set out.

(a) To build homes for lease or sale.

(b) To advance money to local authorities which they could use for building municipal houses or for advancing to individuals who wished to build their own homes.

(c) To advance money for home-building direct to individuals.

In 1922 the familiar State Advances organisation appeared. After that no further important action was taken until the inauguration of "State housing" in 1936, followed in 1939 by the Rural Housing Act, which it will be necessary to discuss a little more fully.

Where sufficient capital is not immediately available the normal way of financing home-building is by mortgage loan, obtained from a private individual, a financial institution, or the State. Such arrangements have been available to farmers in the past, but have not been adequate for their needs. The 1939 Act empowers local authorities to advance money to a farmer to enable him to provide a dwelling for his own use, or for the use of any farm worker principally employed by him. The act is administered by the local authority (usually the County Council) and the State Advances Corporation, which makes the money available for loan to the local authority in the first place. The rate of interest charged is 3½ per cent. and the loans are limited to £1,250. Provision is made for repayment by equal instalments over 15 to 25 years. Further service is provided in helping with the actual building. The corporation has issued booklets of suggested plans, and if one of these is chosen, a triple set of working plans and specifications is provided for a small fee. Assistance is given in the business of arranging for tenders to be called, and inspection by the local authority is required before progress payments are made during the period of construction. Those who wish to do so may of course provide their own plans. Co-operative dairy companies also may use this scheme to provide houses for their employees.

Up to the end of 1943, 66 counties had borrowed £744,550 for use in this way, and 321 approvals for building had been issued. In 1943-44, 323 approvals were granted, making a total of 644. These figures may be compared with those for the total number of new private dwellings built in rural areas in recent years as shown in the following table:—

NUMBER OF NEW PRIVATE HOUSES IN RURAL AREAS[‡]

Year.	New Rural Houses.
1937-38	1,001
1938-39	1,604
1939-40	1,581
1940-41	1,730
1941-42	1,669
1942-43	771

[‡] Source: N.Z. Official Year Book. Section—Building and Construction.

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[*] The information in this section has been summarised from the following official publications:—

General Report on State Housing in N.Z. issued 1943—Ministry of Works, Department of Housing Construction.

Designs for Rural Houses, 1st Booklet issued 1940—State Advances Corporation.

Annual report, State Advances Corporation—Parliamentary Paper B.13.

New Zealand Official Year Book.

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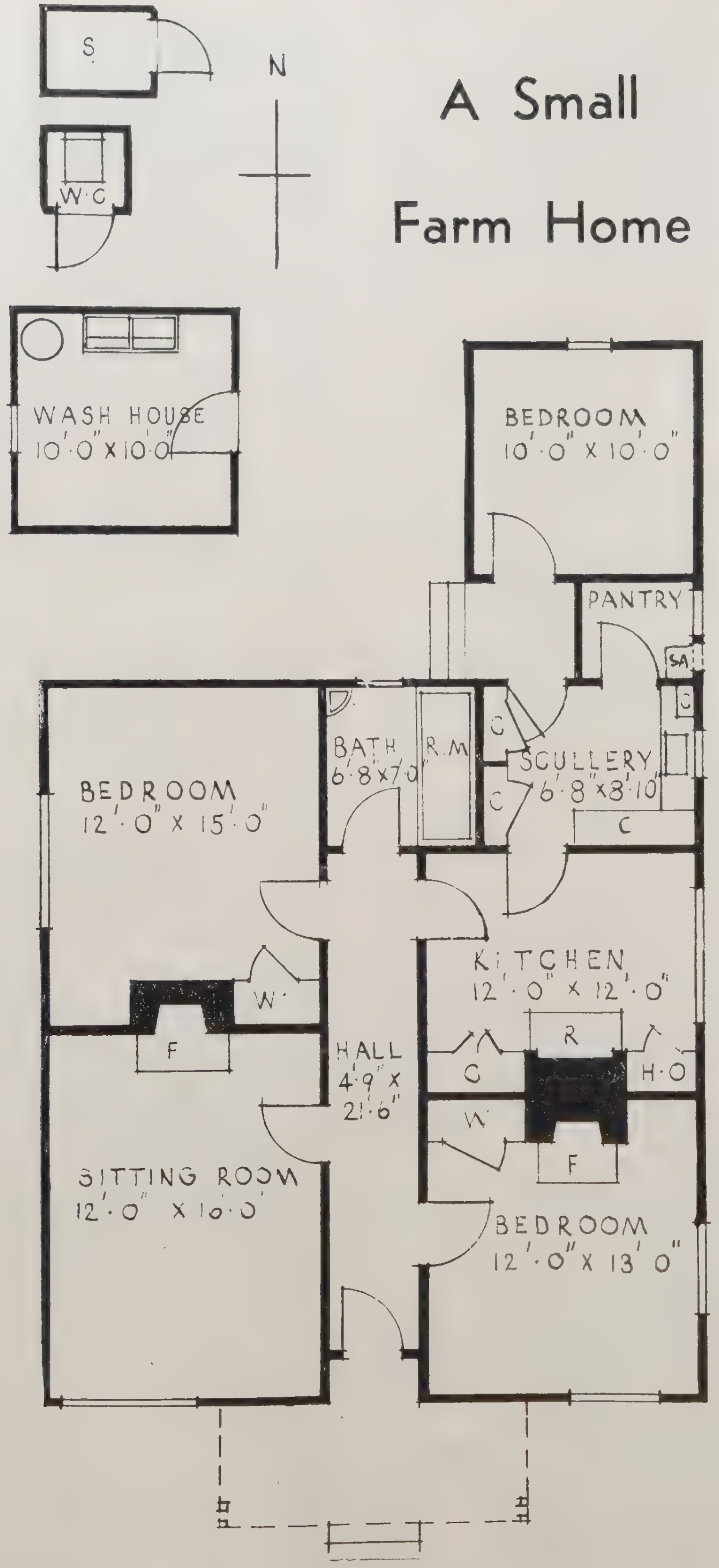
A Small Farm Home



THIS house (built in 1928) shows an arrangement typical of many farm houses, as compact buildings like this are economical to construct. The house is now larger than it was originally, as a new detached washhouse and lavatory have been built and the space they formerly occupied in the house converted to a bedroom and pantry. A semi-detached bedroom of this kind is useful in a farm home if accommodation is needed for a single man working on the place, but the convenience of having everything under one roof has been lost. This points to the necessity for planning farm houses which can be added to easily if it becomes necessary.

The division of scullery and kitchen means that most of the work is done in the scullery, and the kitchen then becomes more a meal and living room, an arrangement which may be preferred in a small home, though moving between the two rooms adds to the work of the housewife. When the scullery is also used as a passageway the doors make it difficult to arrange the room satisfactorily.

The central hall gives good access to all the other rooms.

KEY:

W = Wardrobe.
C = Cupboard.
F = Fireplace.
R = Range (fuel).
Sa = Safe
S = Coal store.
H = Hot water cylinder and cupboard.

Radio Broadcasts

RADIO talks to farmers will be given from Station 1YA, Auckland, at 7.15 p.m. on the following dates:—

November 5, "Work on the Farm for the Coming Month," by E. B. Glanville, Acting Fields Superintendent, Department of Agriculture, and P. S. Syme, Instructor in Agriculture, Warkworth.

November 12, "The Work of the Rural Development Division," by P. W. Smallfield, Director, Rural Development Division, Department of Agriculture, Wellington.

In 1938 the Maori Housing Amendment Act established a Maori housing scheme under the control of the Board of Native Affairs. Provision was made for the erection of dwellings and their disposal by sale or lease, subject to certain restrictions.

Because of war conditions the need for temporary accommodation on farms became acute, and up to March 31, 1941, almost 1,000 Public Works huts were supplied. A more recent scheme, introduced towards the end of 1944, provided for the offer of Army huts for temporary accommodation and for single men and two standard type houses where permanent dwellings were required. Erection and fitting are carried out by the Housing Construction Department, and if the buyer cannot pay cash or arrange a mortgage, a State Advances loan can be made available. Temporary dwellings could be leased.

Part of the present rural housing problem consists of insufficient houses. The 1936 Census figures are as shown below:—

OCCUPIED, OVERCROWDED, AND UNOCCUPIED HOUSES IN RURAL AREAS.

Rural Dwellings

Total Occupied.	Overcrowded.	Unoccupied.
113,597	2,289	3,700

Total population and (more significant) the number of separate families have, however, increased since then.

A second part of the problem is houses in the wrong places; there are habitable houses on abandoned farms and in villages which are "going back." Finally, there are large numbers of houses which are habitable, but provide accommodation far below modern standards of comfort and convenience.

FARM HOUSING SURVEY

The Department of Agriculture is at present preparing to undertake a fairly extensive survey of farm housing. Social research of this kind has been neglected in New Zealand, and although it is obvious that the rural housing situation is a serious problem, there is little reliable information available on which a long-term policy of improvement could be based. The information being asked for is of two types—first, factual information about existing conditions, and second, information about the things which people feel they need and want most in their homes. The survey is concerned particularly, too, in obtaining the interest and opinions of farm women, because so many existing houses, although sound and well built, are inconvenient and badly planned for working and living.

Questions on existing conditions will cover such points as the size, condition, and age of the house; the number of people living in it permanently, or who have to be catered for periodically; and what alterations or changes, if any, are most desired. As a good deal of needed information which would otherwise mean long lists of questions can be obtained from a plan of the house, it is hoped that those taking part in the survey will cooperate by drawing rough sketch plans of their houses. Water supply, drainage, sanitary arrangements, and the use of electricity are four other important problems, because the extent to which these are satisfactory determines very largely the comfort and convenience of the house, and it is here that farm families experience most difficulty in maintaining standards which town people take for granted. Education and assistance are both necessary to improve the situation, and to be most effective they must be based on detailed and widespread knowledge. Questions about what people have in their homes are relatively straightforward and simple, both to ask and to answer. Questions about likes and dislikes, needs and desires, are more difficult to deal with, but equally essential in this case. The Department hopes that one of the ways it will be able to help in overcoming housing problems will be by preparing plans of houses which will be suitable for different types of farms and different-sized families. When complete these plans will be made available as suggestions to farmers who are building homes for themselves or their employees. An architect planning a house for an individual family can consult them directly about their likes and dislikes. Plans prepared for wide circulation must be based on generally-expressed preferences, and it is extremely important to know if people really do want electric stoves, or if the general usefulness of the fuel range makes it more popular for farm kitchens; what are considered the most convenient places to have meals and keep the baby's pram; how big should the kitchen be; are built-in wardrobes in bedrooms considered more useful than built-in cupboards in the kitchen, and so on. The same amount of money and materials expended can produce houses very different in exterior appearance and interior plan. In some cases builder, electrician, or plumber can say that one particular arrangement is superior and should be adopted; in others the technician's job is to carry out, as effectively as possible, the wishes of the people who are going to live in the house.

It is generally agreed that lack of convenient, or even adequate, houses is keeping many otherwise willing workers off the land, and also adding greatly to the burdens of the country wife and mother. The proposed survey will show where overcrowding is worst; if there are many houses where minor rearrangements or additions would add considerably to "livability"; what conveniences are most needed and most desired, and what arrangements have been found most or least satisfactory in houses at present occupied. A town housing survey was

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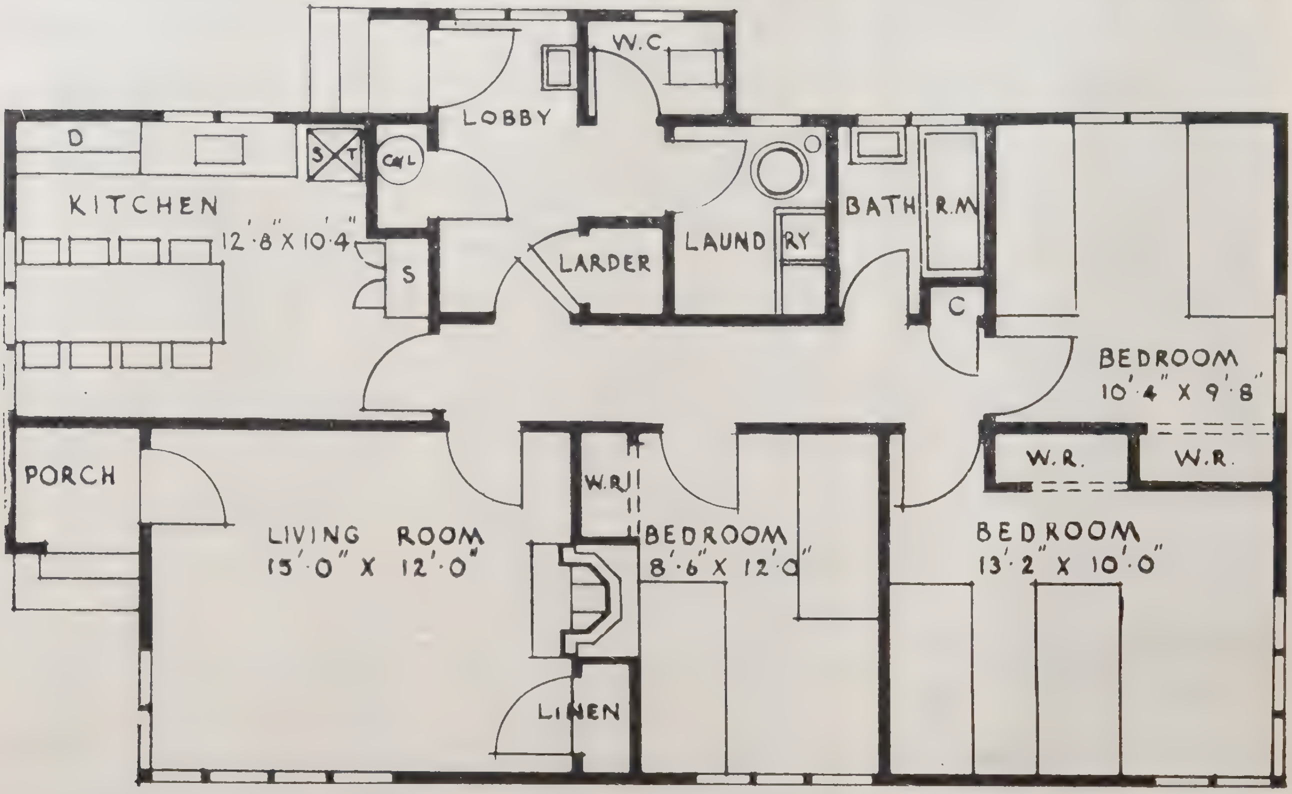


THIS is one of the plans being used by the Housing Construction Department for resettling ex-servicemen. It is a compact three-bedroom house, including all modern conveniences and designed to provide adequate accommodation for a family.

The back entrance has a lobby with a wash basin, storage space, and doors leading to the w.c., laundry, and the passage which gives access to all the other rooms of the house. The kitchen is equipped with a fuel range (or in reticulated areas an electric stove if desired), built-in dresser, and large ventilated safe, and has space for a meal table, so that the living room need not be used for meals. The living room opens on to the front porch, but the doors are arranged so that there should be no direct draught. All the bedrooms have built-in wardrobes, and can accommodate two single beds. Windows are placed so that all rooms of the house will receive sunshine.

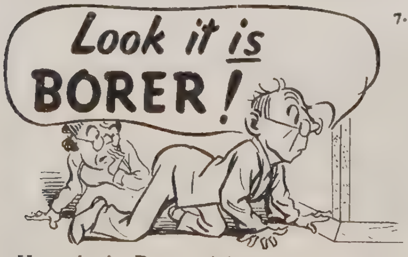
If necessary, it would be possible to extend the passage and build additional bedrooms, although the kitchen and living space would not be sufficient for a much larger family.

7-5

made as long ago as 1936. It probably will not be possible for the survey to be carried out by personal interviews, but it is hoped that all those who agree to receive questionnaires will co-operate by answering them as fully and accurately as possible, and returning them as requested. The main survey will be carried out through interested country women's organisations. It is expected that meetings will be arranged for field officers to explain and distribute questionnaires, and possibly further discussions will be held at each centre when the questionnaires are being returned after they have been filled in.

Acknowledgments

Acknowledgments and thanks are expressed to the farm families who co-operated in supplying plans, photographs, and information about their homes; and to the Department of Housing Construction for drawing plans.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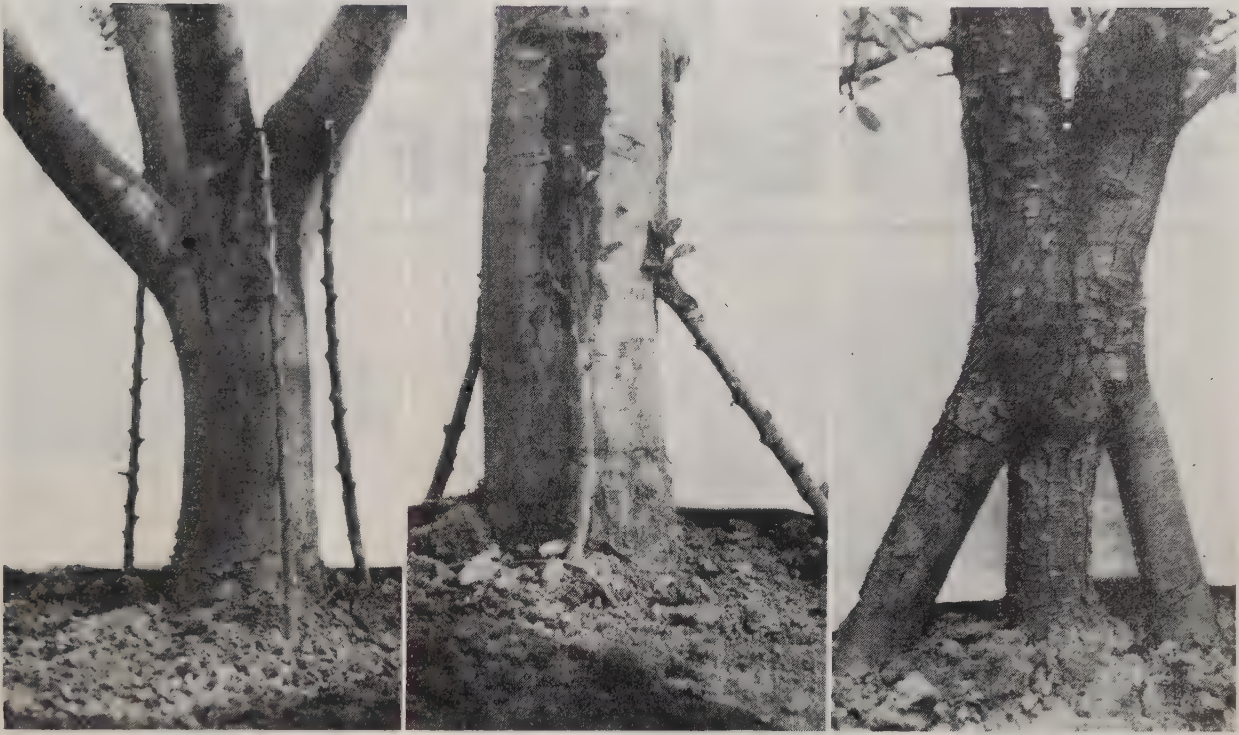

Left—French crab stocks planted and ready for inarching. Middle—An apple tree inarched in the spring of 1943. Right—A treated Louise Bonne de Jersey pear tree. The centre stem is the original trunk, while the outside ones are the seven-year-old inarches.

"Inarching" to Promote Vigour

IN most orchards there are some trees that, through various causes, have stopped growing and appear weak and unhealthy. No matter what treatment, such as manuring and adequate cultivation, is given to some of these trees, little response in growth can be secured. The orchardist is faced, therefore, with the problem of replanting, or of accepting the position, hoping that something will eventually add vigour to these trees. Replanting with pip-fruit trees where the old ones have been removed is unsuccessful in most cases, and no grower desires poor trees on the orchard provided some remedy can be secured.

AN unhealthy tree indicates a poor root system, while a healthy tree has a vigorous and extensive root system. The "inarching" of a new stock into unthrifty trees to give an additional well-developed root system and promote growth has been practised on pear trees in Hawke's Bay with satisfactory results.

Marked Response

Seven years ago a line of Louise Bonne de Jersey pear trees propagated on quince stock were given a new root system by inarching pear stocks into the existing trunk. These trees were then 12 years old and, as frequently occurs with pears propagated on quince stocks, they were very poor specimens. Three years after treatment some improvement was visible, and today all of these trees, where the inarching has been successful, have responded in a marked degree and now have the advantages associated with both types of stock, namely, vigorous growth as usually supplied by the pear stock, and a heavy crop of fruit of excellent quality attributed to the quince stock.

Inarching Technique

The accompanying photographs illustrate the methods adopted and the results obtained.

The technique of the operation, which is purely one of grafting, was to procure young pear stocks, not budded to any variety, from a nursery and plant them during the month of July approximately 9in. from the existing tree trunk. Two stocks per tree were used, one on either side of the trunk. At the normal grafting period a strip of bark 6in. long, the exact width of the young stock, was removed from the original tree trunk, the top of the strip being approximately 16in. from ground level. The stock was then prepared with a 6in. slanting cut so that it fitted into the groove in the trunk, cut surface to cut surface, bringing together the two cambium layers, without which no graft can be successful. Using two or three ⅝in. tacks, the stock was tacked into place and the operation finished by sealing with some suitable grafting wax. Great care must be taken to ensure that an air- and water-tight seal is secured. Several variations, such as an inverted T and L cut on the tree trunk, have been tried, but the best results were secured

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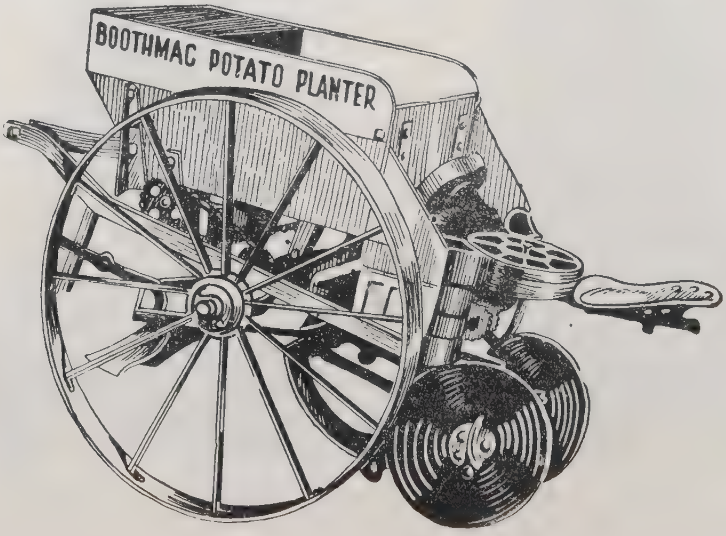

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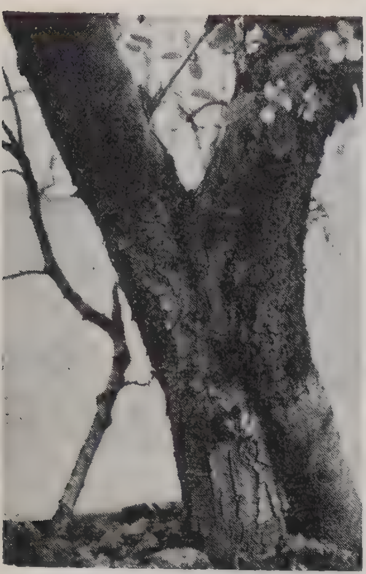


On the right a successful inarch; on the left an unsuccessful one.

by the removal of the strip of bark as described above.

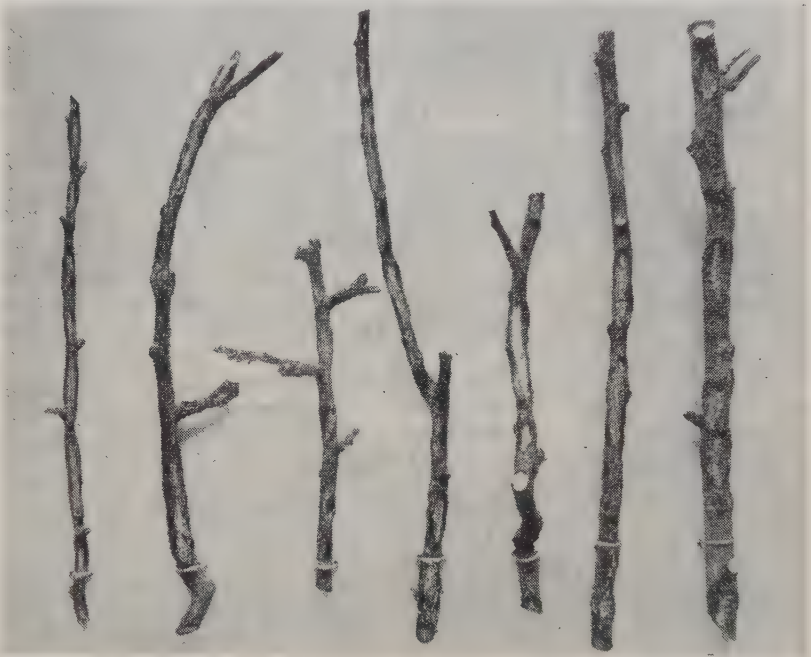
On one tree only one of the inarches made a union, the other being damaged by implements shortly after treatment. The results are interesting. On the side of the tree where the union was successful there is abundant growth, while on the side of the tree where there is no union there is no growth, the condition typical of all the trees prior to treatment. The stock that did not take is still alive, and, although it is exactly the same age as the successful one, there has been practically no growth, due to the lack of influence of the established tree top to promote sap circulation and because of shade of the larger tree preventing its development by itself. This emphasises the mutual assistance which obtains between the inarching stock and the main tree.

More Vigorous Stocks

The successful practice of inarching would appear to depend entirely on securing stocks that are much more vigorous than the original ones. The degree of vigour of the pear stock relative to that of the quince stock is high, and good results have been secured by using the former for inarching. To secure comparable results on apple trees a stock such as East Maling No. 12, with a much higher degree of vigour than Northern Spy, the most common stock of existing orchards, should be selected for use.

Further evidence of the success of the inarching of pear stock into trees on quince stock has been noted recently on another orchard, the increase in crop being considerable. By the application of inarching to unthrifty, weak trees other growers could also obtain similar benefits without much effort.

—K. C. HOCKEY, Orchard Instructor, Roxburgh.



Hail Damage to Apple Trees

SOME indication of the severity of the damage caused to many of the apple trees in the Loburn district by the hail storm last season may be obtained from the accompanying photograph of wood taken from Cox's Orange trees in the orchard of Mr. D. Hoskin. The pruning of these trees was recently the subject of a demonstration by the local Orchard Instructor, who advised the cutting back to base buds of all light type wood showing injury as extensive as that illustrated, as healing over is not likely to be satisfactory and breakage of shoots will occur in many instances if fruit is produced on such damaged wood. Callusing of the bark appears to be taking place rapidly on the heaviest wood shown, so that this type may be retained if required.

Although nearly all last year's shoots will have to be removed, there are sufficient fully-developed fruit buds on short spurs to allow for a moderate crop next season. There will, however, be a shortage of wood on which normally the fruit buds for the following season would develop.

The pruning of these trees will be somewhat laborious, as although the damage is very severe, it is readily noticed from only one side of the tree.

A. R. GRAINGER,
Orchard Instructor,
Christchurch.

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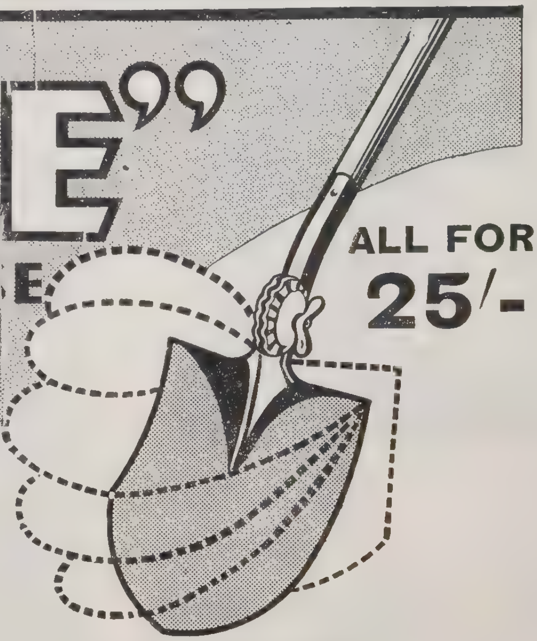

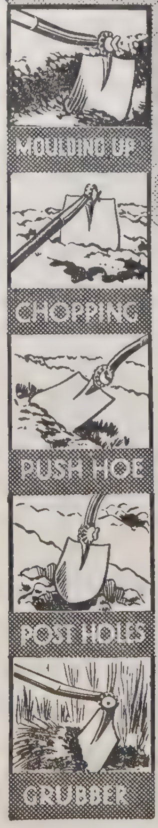

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Comparison of Two Methods of Fertiliser Application to Spring-planted Cabbage

By

T. E. RODDA, *Fields Instructor, Hamilton.*

Cabbage 71 days from planting.

ALTHOUGH it has been recognised for some time that ridging of the land and the placing of artificial fertilisers directly underneath the plants has a most pronounced and beneficial effect on the growth of winter, late winter, and very early spring-planted cabbage, it was not definitely known if such method would have any effect on mid-spring plantings. To clear up this point the experiment described in this article was laid down on the Hamilton clay loam type of soil on the Ohaupo Road not far from Hamilton.

A FAIRLY even area facing west was selected and the planting planned as follows:—Half the area to have the manure sown in one band on the surface at the rate of 5cwt. per acre, such bands being covered with a ridging plough, thus enabling the plants to be set on the crests of the ridges with the manure underneath. The manure in the other half of the area was sown in two bands, 3in. deep in the soil placed 7in. apart, and the cabbage plants midway between. These two methods were alternated by planting in plots of four rows, four rows in ridges and four rows on the flat until the whole area was planted, thus obtaining 16 rows 5 chains long on ridges and the same number of rows of a similar length planted on the flat. Manuring and ridging can also be done with a potato planter, or a turnip ridger, while an ordinary farm drill can be used for sowing the twin bands of manure and lining out on the flat system.

In this experiment the rows were placed 3ft. apart and the plants set 2ft. apart in the rows. Manuring, ridging, and planting were done on September 19 and 20, the variety of cabbage being Golden Acre. The plants struck well. Upon inspection one week later it was found advisable to replace 150 doubtful ones immediately.

In this trial it was also decided to test out the influence of boron as a side dressing to control stem rot and soft rot in mature crops. Accordingly one row of each plot of four rows, the second row from the left in each case, was treated as follows:—Boron at the rate of 10lb. per acre and at the rate of 20lb. per acre applied 15 days after planting.

Showing the majority of the area under trial. The infection of stem rot was found in a strip running at right angles to the rows in the area between the white lines on the photograph. This area is the crown of a very slight ridge.

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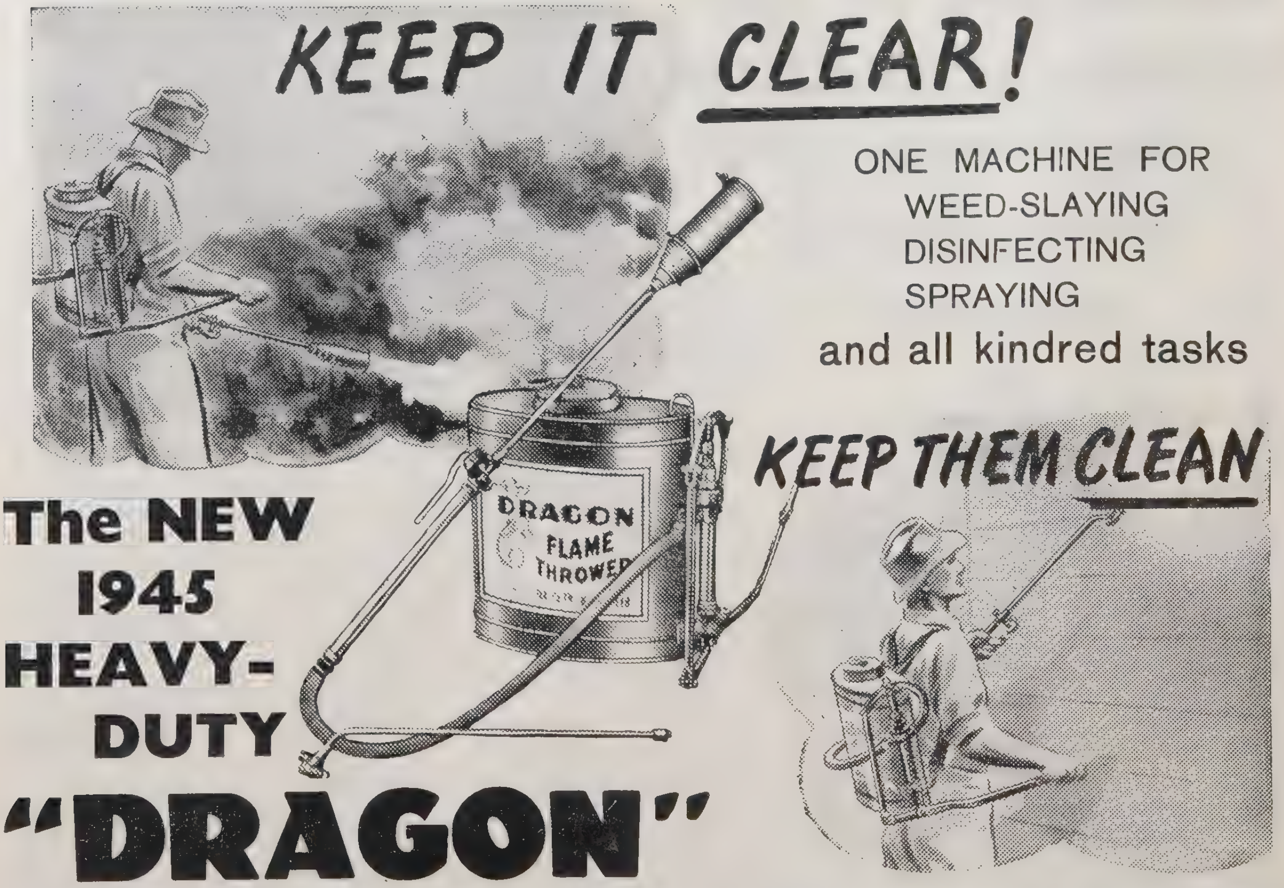

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Manuring was as follows:—Blood and bone and serpentine superphosphate mixed in equal parts by weight, and applied at the rate of 5cwt. per acre at time of planting, and side dressed with 3cwt. of the same mixture on November 2.

Cultivation

After planting the following cultivations were given:—All plots were scarified on October 2, the scarifier (single horse) being extended to suit rows planted on the flat, but drawn in to its narrowest limit while being used among ridged rows. On October 16 rows on the flat were re-scarified and ridged rows re-moulded with moulding attachment on scarifier. Cultivation of soil between plants was done by hand hoeing. This cultivation was repeated after side dressing with manure on November 2, this being the final cultivation.

Growth

In comparing the growth of the various plots on November 1 it was recorded that the plants in the ridged plots were 50 per cent. larger than those on the flat. Compared again on November 29 it was noted that the differences of growth between the two sets of plots were not so marked, but plants in ridged plots were still in advance of those on the flat.

Harvesting Results

To get an accurate conclusion from this experiment it was finally decided to grade and weigh all cabbages as they became ready for market. The cutting period extended from December 15 to January 16. Results were as follows:—

		lb.
1st cutting	Plots ridged ..	5,811
	Plots on flat ..	2,282
2nd "	Plots ridged ..	3,440
	Plots on flat ..	3,080
3rd "	Plots ridged ..	6,615
	Plots on flat ..	7,819
4th "	Plots ridged ..	1,028
	Plots on flat ..	3,316

Tonnages per acre were as follows:—

Ridged	21.54 tons
On flat	21.04 "

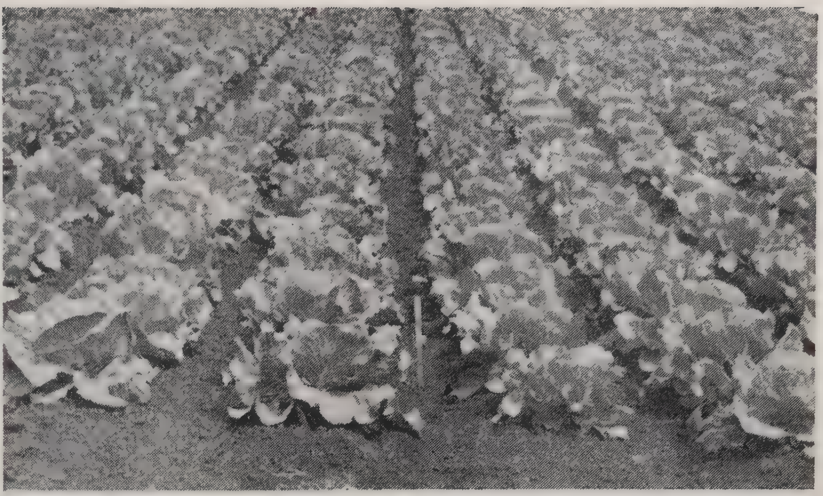
Grading was as follows:—

Ridged ..	87.7% 1st grade,	13.3% 2nd grade.
On flat ..	74.7% 1st grade,	25.3% 2nd grade.

Rot Infection

As the cabbages were cut each cabbage and the severed stem in the boron-treated row and a comparable untreated row—the fourth row in each plot—were examined, and all infection recorded. Infection percentages were as follows:—

	Per cent.
Boron-treated rows at 10lb. per acre ..	2.8
Untreated check rows	3.1
Boron-treated rows at 20lb. per acre ..	1.8
Untreated check rows	3.6



The four rows on left side of stick ridged; the four rows on right of stick on flat variety Golden Acre. Photograph taken two weeks before first cutting was made.

Stem rot infection was practically confined to a strip of land varying from 4 yards to 10 yards wide running at right angles to the line of rows. Soil examinations on this area are to be carried out.

From the results obtained it is apparent that ridging and placing the manure directly underneath the plants have a distinct influence on early growth and the production of a larger percentage of early-maturing cabbages that will in normal seasons command the better price. Grading percentages are also in favour of ridging. The only rejects from the whole area were 20 cabbages badly infected with stem rot.

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E. O. C. HYDE,
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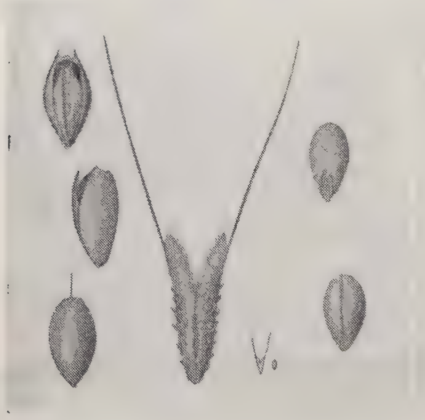
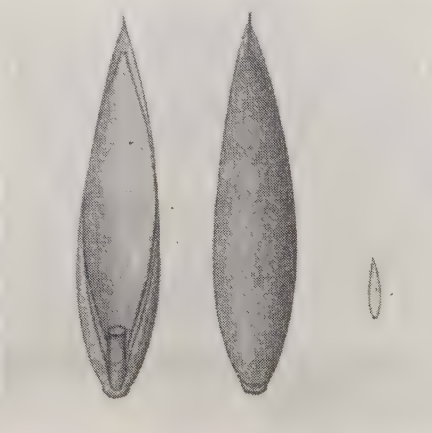
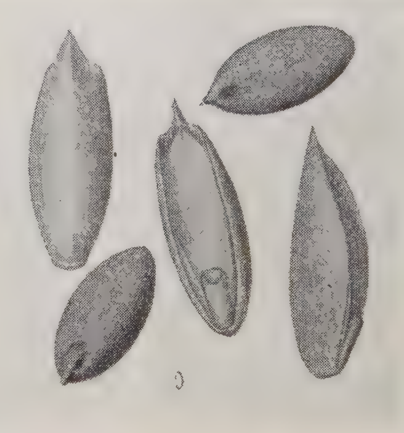


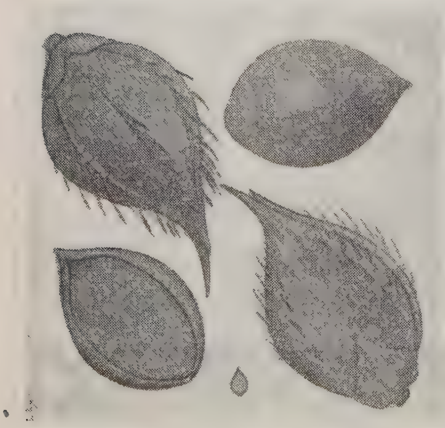
POLYPOGON MONSPELIENSIS: BEARD-GRASS. Straw coloured. Occurs rather infrequently in cocksfoot, crested dogstail, and ryegrass. An annual grass widely distributed, especially in coastal regions.



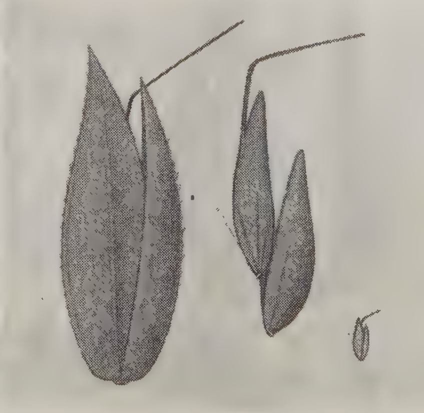
FESTUCA ARUNDINACEA: TALL FESCUE. Straw coloured. Occurs with medium frequency in cocksfoot and rarely in ryegrass. A coarse and rather unpalatable grass common in wet pasture land. The seed is very subject to ergot attack.



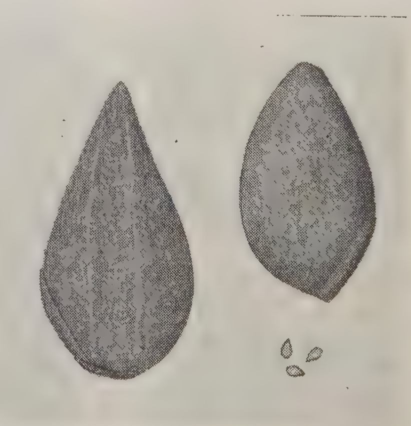
PUCCINELLIA FASCICULATA. Colour yellow to grey. Occurs frequently in creeping bent seed and rarely in *Lotus major* and white clover. A perennial grass often abundant on wet, salty land.



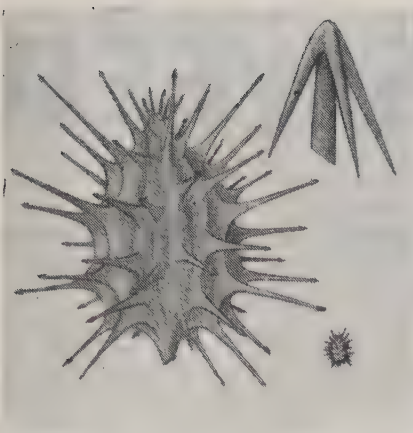
ECHINOCHLOA CRUSGALLI: BARN-YARD-GRASS. Straw coloured. Occurs infrequently in cocksfoot, red clover, and mangold. An annual weed.



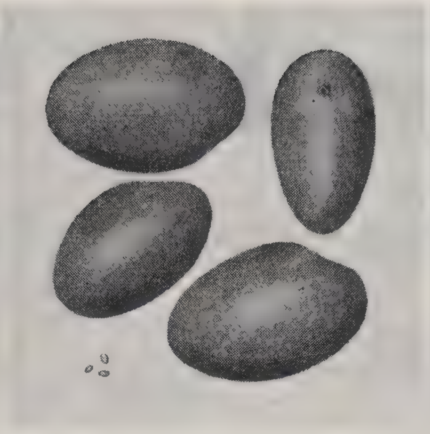
HOLCUS MOLLIS: CREEPING FOG OR SOFT FOG. Light straw colour. Occurs rarely in cocksfoot. A perennial grass spreading by underground stems.



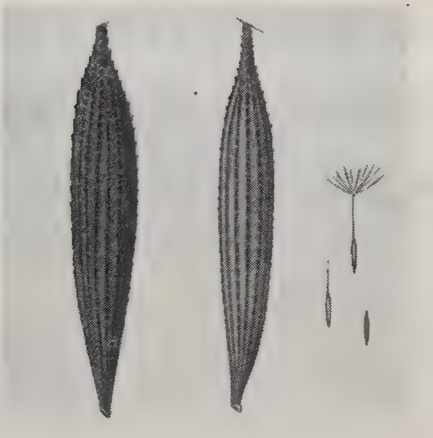
PHALARIS MINOR: LESSER CANARY-GRASS. Colour grey. Occurs with medium frequency in white clover. An annual weed of little importance.



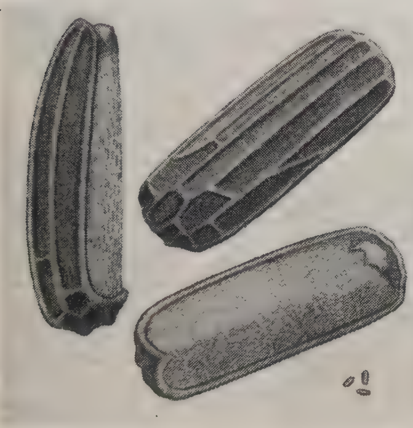
ACAENA OVINA: SHEEP S BURR. Colour brown. Occurs rarely in danthonia and in cocksfoot seed which has not been machine-dressed. Australia admits not more than 20 seeds to the ounce. A perennial weed closely related to the native bidi-bid.



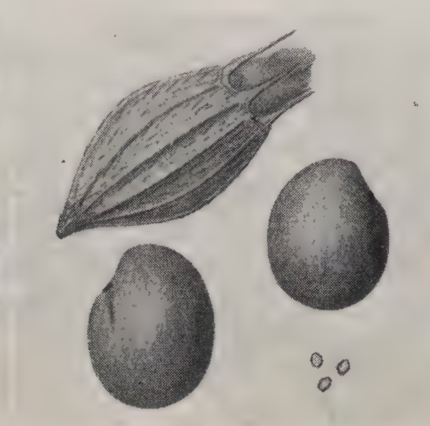
TRIFOLIUM DUBIUM: SUCKLING CLOVER. Colour yellow to brown. Occurs very frequently in white clover seed. An annual clover useful in pastures on land of low fertility, but undesirable on fertile land, especially where white clover is harvested for seed.



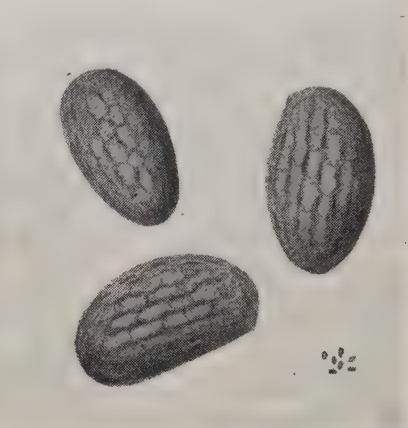
HYPOCHAERIS RADICATA: CATSEAR. Colour brown or sometimes nearly black. Occurs frequently in cocksfoot, ryegrass, chewings fescue, and crested dogstail. Australia admits not more than 100 seeds per ounce. A perennial rosette weed very common in pastures and lawns.



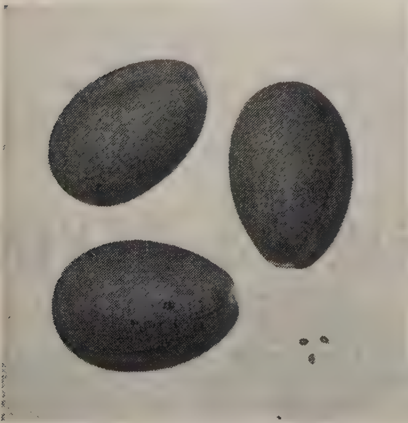
VERBENA OFFICINALIS: VERVAIN. Colour, one side brown, the other light grey. Occurs rarely in *Lotus major, Lotus hispidus,* and white clover. An annual weed.



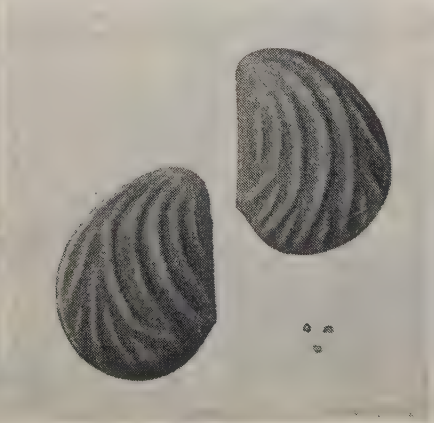
TRIFOLIUM STRIATUM: KNOTTED CLOVER. Colour yellow to brown. Occurs with medium frequency in red clover and lucerne. An annual clover most commonly found on light, dry land.



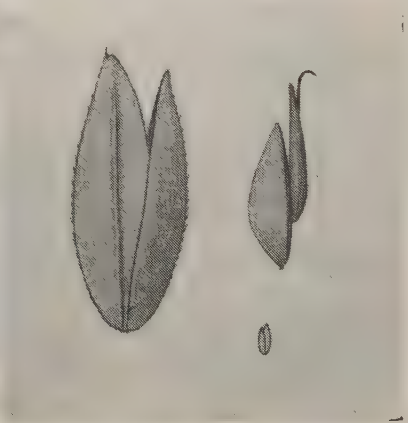
GILIA SQUARROSA: STINK WEED. Colour black. Occurs rather infrequently in white clover and yarrow. Australia prohibits importation. An annual weed troublesome on dry pasture land.



DIPLOTAXIS MURALIS: WALL ROCKET. Colour dark brown to black. Occurs infrequently in white clover. Australia admits not more than 100 seeds to the ounce. An annual or biennial weed found mostly on light land near the coast.



POTENTILLA NORVEGICA: ROUGH CINQUEFOIL. Colour yellow to light brown. Occurs frequently in timothy seed imported from America. A perennial weed which has become established in only a few localities in the North Island.



HOLCUS LANATUS: YORKSHIRE FOG. Light straw colour. Occurs frequently in cocksfoot, white clover, and crested dogstail. A useful grass on swampy land, but objectionable where it displaces more productive pasture plants.

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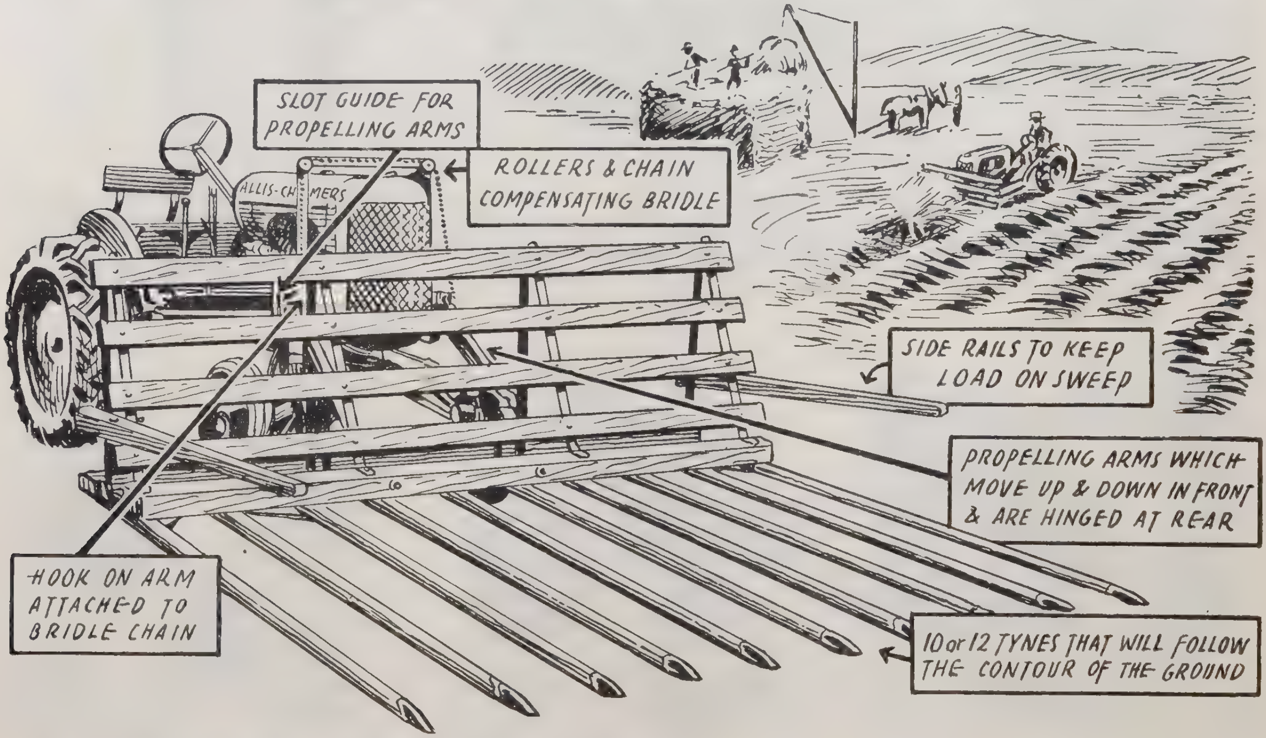
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Wool Disposal by Joint Organisation

London Conference Proposals

SHORT details of recommendations contained in the agreement reached between the four Governments (United Kingdom, Australia, South Africa, and New Zealand) represented at the conference in London in April and May on the disposal of accumulated stocks of wool and the future marketing of current clips are tabulated below.

1. The stocks of wool will in future be held by the United Kingdom and Dominion Governments in partnership, and a Joint Organisation will be formed to take charge of the marketing of old wool and to support the marketing of current clips during the disposal of the surplus. The total stocks of Dominion origin wool at June 30, 1945, are 3,245 million lb.

Australia, 63% ..	2,060 million lb.
South Africa, 20%	645 " "
New Zealand, 17%	540 " "
	3,245 " "

2. It is intended that as soon as conditions permit current clips shall be offered by growers at auction as before the war, and that, in addition, the Joint Organisation will offer wool from stock at the auctions, with the object of maximising total sales and turning over stock. The grower shall have the right to withdraw his wool if he regards the price offered as inadequate. The grower also has the further right to re-offer or ship on own account to London.

3. All wool will be offered subject to minimum reserve prices, and the Joint Organisation will take up, at reserve prices, such new wool as is not sold at or above these prices.

4. The Joint Organisation (a private registered company with a nominal capital of 8 shares) to be formed in London to operate from August 1, 1945, will comprise:—United Kingdom Government 4 shares; Australian Government 2 shares; South African Government 1 share; and New Zealand Government 1 share.

5. The number of directors of the Joint Organisation will correspond with the share-holding as in paragraph 4 above, with an independent chairman appointed by the four Governments in agreement. In addition the chairmen of the three Dominion subsidiaries (referred to in paragraph 6 below) will be ex officio directors of the principal company without additional voting power.

6. This Joint Organisation will have an active subsidiary in each Dominion to conduct the local operations and to act on its behalf.

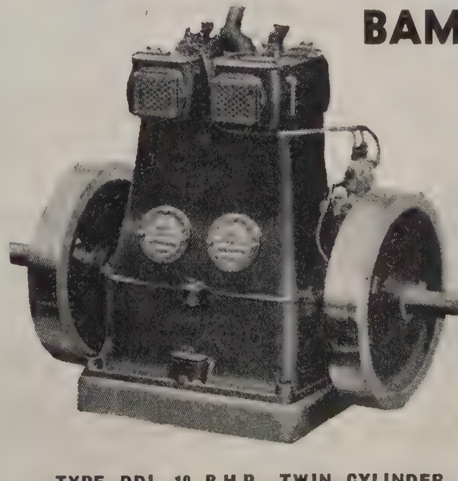
7. The Joint Organisation will operate separate "pools" (United Kingdom/Australia, United Kingdom/South Africa, and United Kingdom/New Zealand) on a 50/50 basis of financial responsibility, for the wool of the respective Dominions, with determination of selling policy by the Joint Organisation.

8. The United Kingdom/New Zealand "pool" will take over present stocks of New Zealand wool at its original cost (including f.o.b. payments) less the amounts accumulated in the divisible profits account. Note: The estimated value of the New Zealand opening stock is £32.5 million sterling and the estimate of divisible profit is £7 million sterling, so that the New Zealand Government's liability on that basis would be approximately £12.75 million sterling, which would be met in four annual instalments of £3.2 million sterling.

9. It is intended that the total current wool clips will be offered by growers for sale at some time during the season, and also a proportion of the old wool stocks as determined by the Joint Organisation. The cost of buying in wool not sold at auction at the reserve price or better will be borne equally by the United Kingdom and New Zealand Governments. It is recognised that the trend of wool prices must move in accordance with general world conditions and the need to expand consumption. At the same time wide price fluctuations will be avoided by the joint measures of adequate offerings and reserve prices. Any substantial variations in the reserve prices (which it is hoped may be fixed for a whole season) will be recommended by the Joint Organisation, but they must be approved by the four Governments.

10. The operating expenses of the Joint Organisation will be borne equally by the wool growers and the Joint Organisation itself. The share of the wool growers will be paid from a contributory charge on all sales of current clip wool at auction or sales to the Joint Organisation at reserve prices. The share of the Joint Organisation will be met by a deduction from the proceeds of sales of wool held by it.

11. The ultimate balance of profit or loss arising from the transactions of the Joint Organisation in the wool of the Dominion will thus be shared equally between the United Kingdom and New Zealand Governments.



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12. For the 1945-46 season the wool clip will be taken up in the same manner as during the war period, and at the overall average price at present ruling. The United Kingdom will be reimbursed by the New Zealand Government for one-half of the cost of any part of the 1945-46 clip which may be unsold at the end of the wool year.

13. The plan is to be reviewed at the end of five years.

QUESTIONS AND ANSWERS

The possible effects of the operations of the Joint Organisation have naturally created a great deal of discussion in the wool industry, and in the following questions and answers prepared by the New Zealand Wool Board many of the points raised or likely to be raised are dealt with.

Question:

Under the plan recommended will wool be sold by auction or the values determined by appraisal?

Answer:

Wool will be auctioned as in pre-war days, but it will first be appraised in brokers' stores by Joint Organisation appraisers for the purpose of fixing reserve prices.

Question:

What will happen if wool does not reach the Joint Organisation's reserve price?

Answer:

It will be bought at the reserve price by the Joint Organisation and reoffered by it when it considers the time opportune.

Question:

Must wool growers accept the Joint Organisation's reserve price if their wool does not bring more at auction?

Answer:

No. Wool growers will have the right to fix their own reserves, and unless a higher price is bid at auction, they may have their wool passed in and may reoffer it later either in New Zealand or in London.

Question:

Will wool which has been withdrawn from sale by a grower and reoffered later still carry the same reserve price?

Answer:

No. It will be revalued to determine either any improvement in market price or possible deterioration of the wool itself.

Question:

When and how will the surplus stocks of wool be offered?

Answer:

Wool from surplus stock will be offered by the Joint Organisation either by auction or by private negotiation, but only in such quantity as the market can reasonably absorb.

Question:

How will the Joint Organisation finance the purchasing of wool which does not reach its reserve price.

Answer:

The New Zealand Government will contribute half the value of the present New Zealand wool stocks in the British-New Zealand pool, and the British Government will find the other half.

Question:

Will wool growers be required to pay the brokers' commission under the plan.

Answer:

Yes, but not until after the 1945-46 season.

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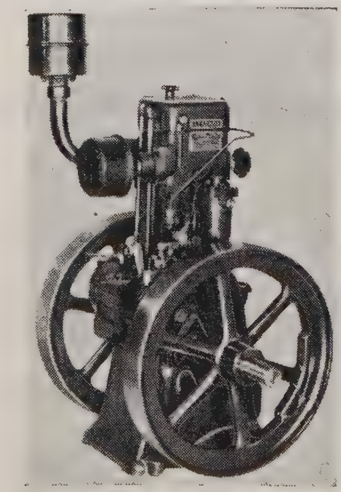

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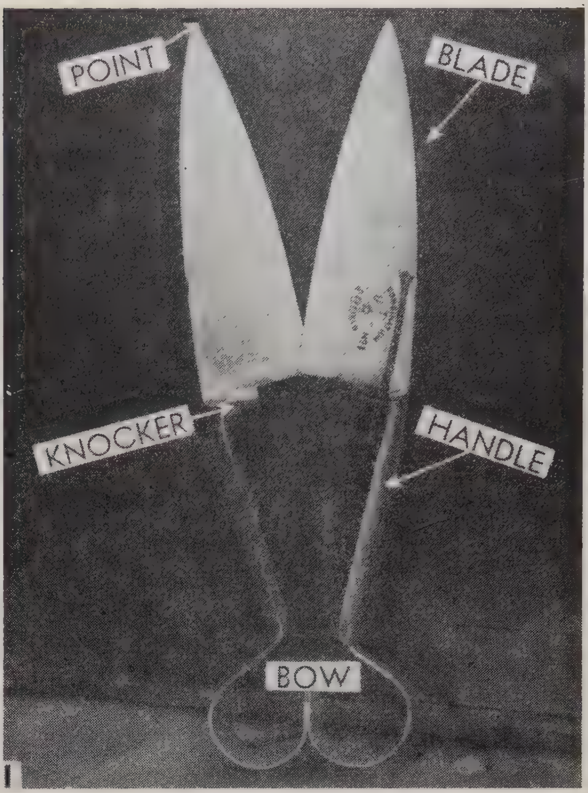
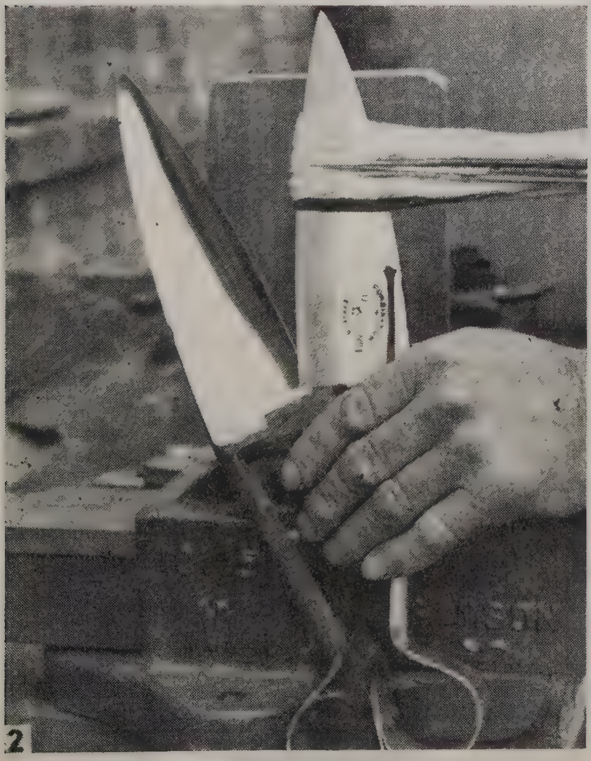
SHARPENING BLADE SHEARS

THE author of this article assisted during the first few years of the war as blade shearing instructor at the Roxburgh Shearing Classes which were organised by the Otago and Central Otago Councils of Primary Production to help to alleviate the shortage of shearers. Mr. Andrew Gibson, of Millers Flat, who has also given instruction at the above classes, has assisted in the compiling of this description and his help is gratefully acknowledged. The sound tuition imparted by those associated with the shearing classes has helped many young men during the last few years to become acquainted with the art of shearing, and a good number have since become expert shearers. The ranks of shearers, especially with the blades, have become sadly depleted. No doubt the example of the Roxburgh and Millers Flat farmers in organising annual shearing classes could with advantage be followed by others in different parts of the Dominion. The following description of sharpening blade shears, although not as adequate as personal tuition, may assist learners to perform that very essential operation which is the keystone to successful shearing.



1. The shears.



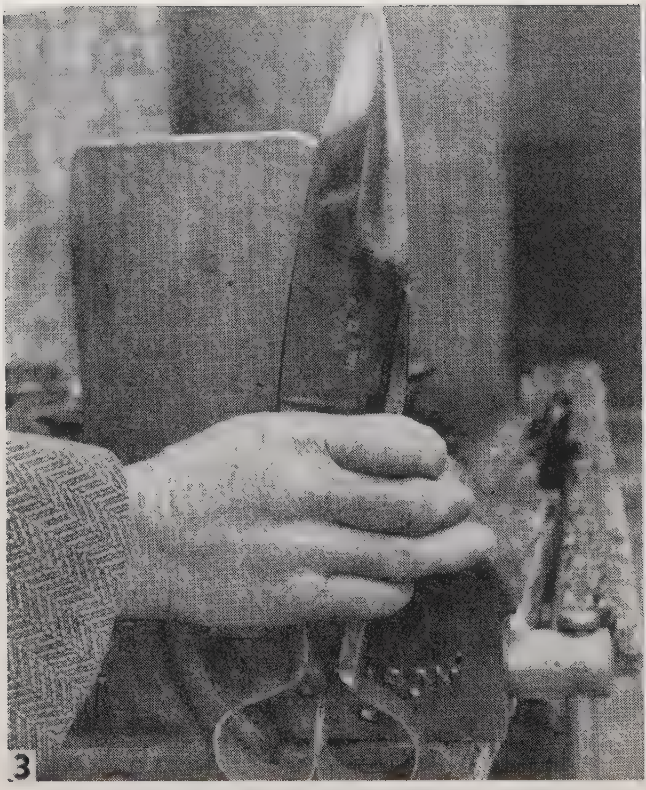
2. Pulling back.

By

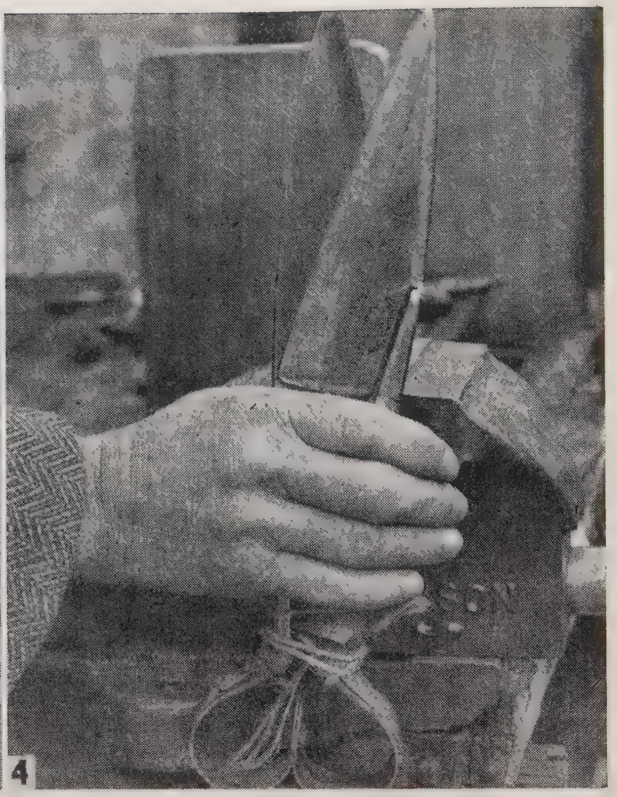
R. FINDLAY, *Organiser, Otago Provincial Council, N.Z. Farmers' Union.*

ALTHOUGH shearing machines have largely displaced the blades on the low country, blade shearing is still very prominent on the high-country sheep stations of the South Island. On account of the likelihood of sudden cold changes, especially on the higher levels to which sheep are mustered after shearing, it is desirable to leave more wool on the sheep, especially along the back where it can protect the kidneys. Unfortunately blade shearing does not seem to be as popular with learners as the machines, partly owing to the fact that machine shearing is probably easier on the operator, and also the latter is quicker, so that more sheep can be shorn in a given time. The first so-called advantage is sometimes a matter of opinion, as some shearers prefer to use the blades even when expert in both methods of shearing; the second is compensated to a certain extent by a difference of shearing rates, the award rates at present being 35/6 per hundred for blades, as against 33/- for machines.

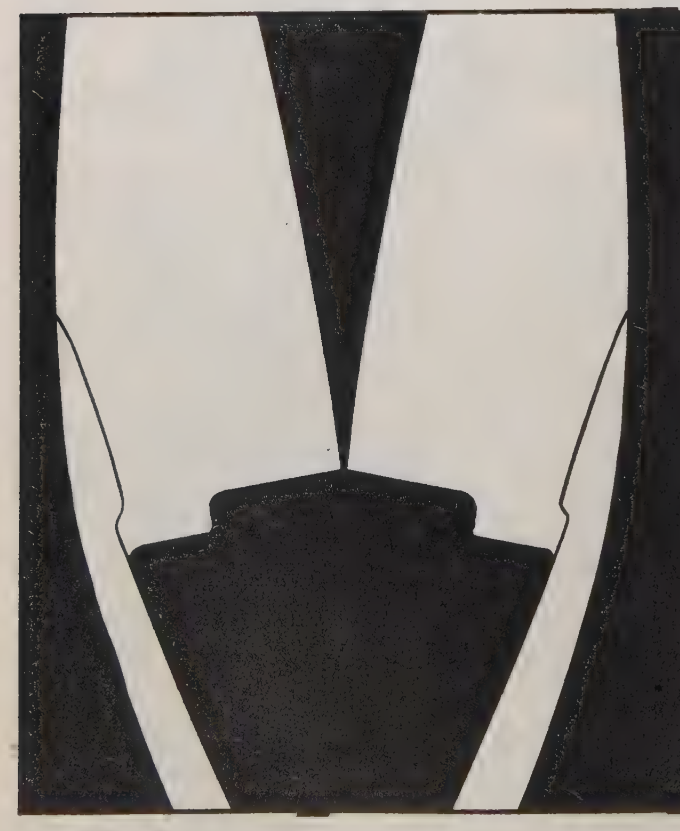
The learner will find, however, that having become adept at blade shearing, it is relatively easy to pick up machine shearing, whereas it is somewhat difficult to change to blades when the learner has been taught the use of machines exclusively. For this reason



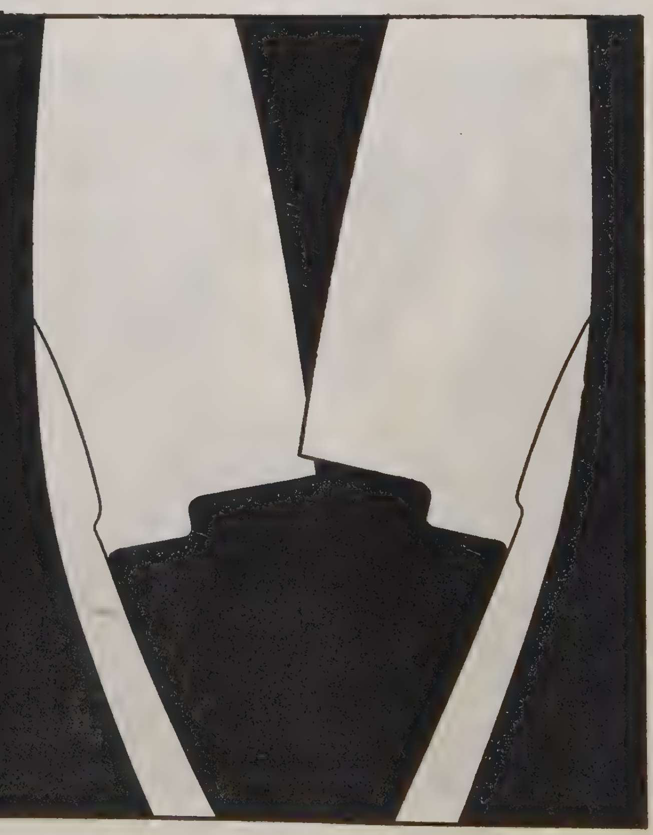
3. Shears closed before pulling back.



4. Shears closed after pulling back.



Position of blades when shears correctly pulled back.



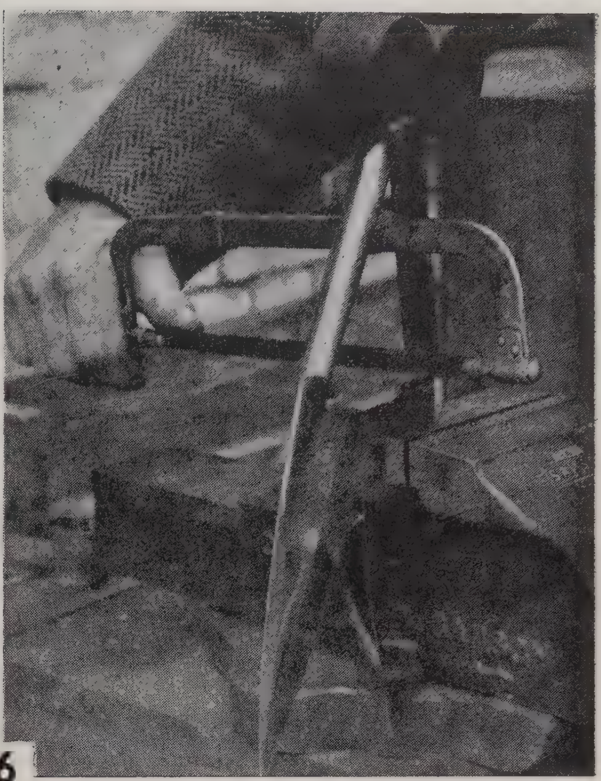
Shears incorrectly pulled back.

learners at some shearing classes are taught the rudiments of blade shearing before proceeding to use the machines. It is simpler to learn the various holds on the sheep and the methods of turning the animal with shears in the hand. The possession of a rattling handpiece in the one hand and a kicking sheep in the other is more likely to upset the concentration of the learner, whose first efforts should be directed to handling the animal without undue exertion.

It is also useful to know something of blade shearing in cases of emergency or for casual operations which do not require the starting of a machine-shearing plant. Shears are used frequently for various odd jobs on the farm, and the facility with which they are carried out depends very often on the sharpness of the instrument. With shearing, sharpness and proper setting of the blades are all important, and learners should be given for the first task the sharpening and setting of the blades.

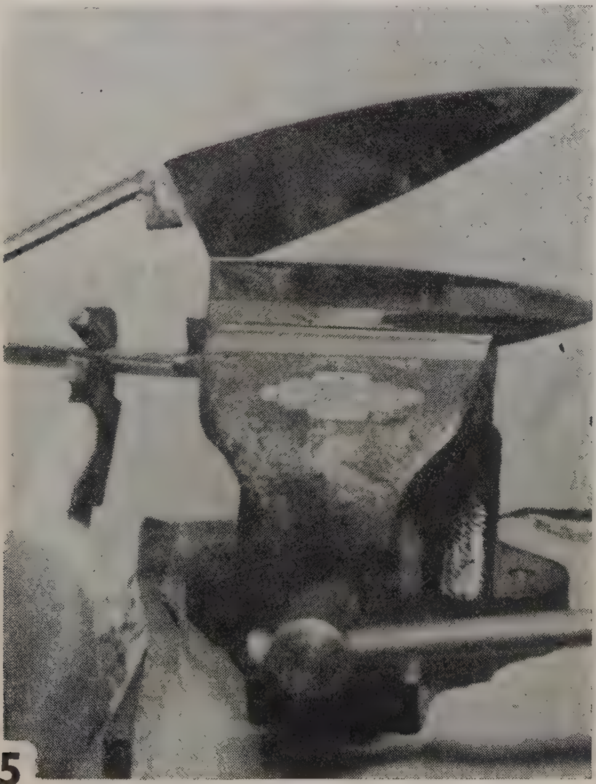
The Shears

A new set of blades (Fig. 1) taken out of the packet may appear impressive and sharp enough for general purposes. Nevertheless, a good deal of attention is required before they can be used for shearing, and the operations which are to be described will make not only for ease of cutting, but also for less effort on the part of the shearer. The sharp edges so necessary for successful shearing will also be maintained for a longer period if the blades are properly set. In any alterations made it is always necessary to maintain as far as possible the makers' "set."



6

6. Taking out piece from knocker.



5

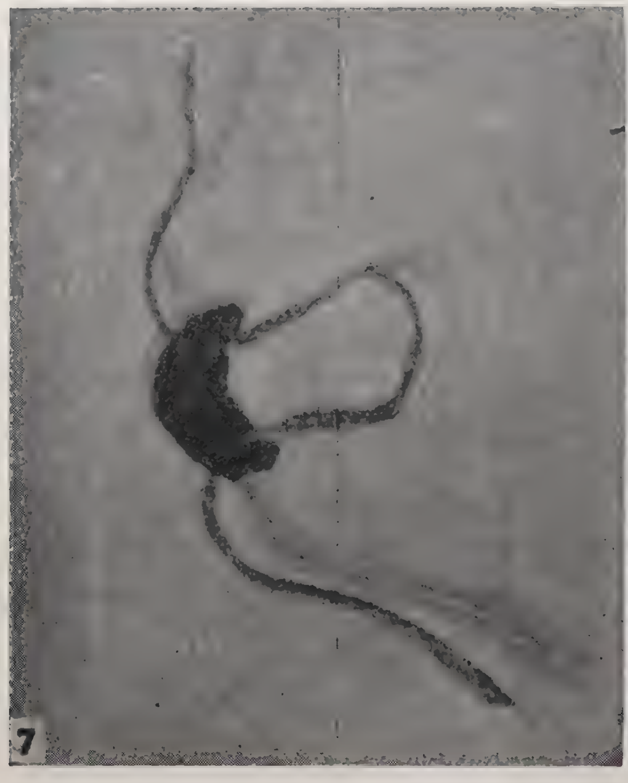
5. Rectifying blades with wrench.

Pulling Back

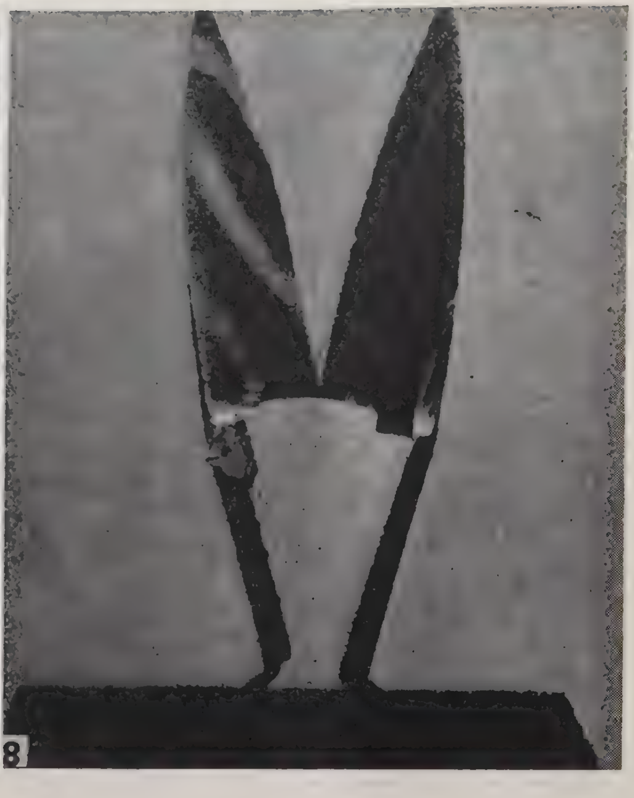
The operation known as "pulling back" (Fig. 2) is carried out so that the shears will take more wool in each cut (Figs. 3 and 4). This pull is imparted in turn to each blade, which is held in a vice. The pull should be straight back towards the operator, who may use a cloth round the blade to get the necessary purchase on the blade. The pull must be even on each blade so as to maintain the makers' set, and no bend must be put on the blade when carrying out this operation. A clamp for the purpose which ensures that no twist is imparted to the blade is on the market. The diagram on the opposite page shows the position of the blades at each stage of pulling back, finishing up with both being even in relation to one another. Any unevenness should be immediately rectified.

This is done by using a wrench on the shears, one blade of which is held in a vice (Fig. 5). The wrench is applied to the handle of the blade in the vice. Pulling or forcing the wrench will have the effect of taking the free blade either off or on. The pulling adjustment would be made if one blade was against the back of the opposite blade when the shears are closed, a condition resulting in the close running blade soon having its edge taken off during shearing.

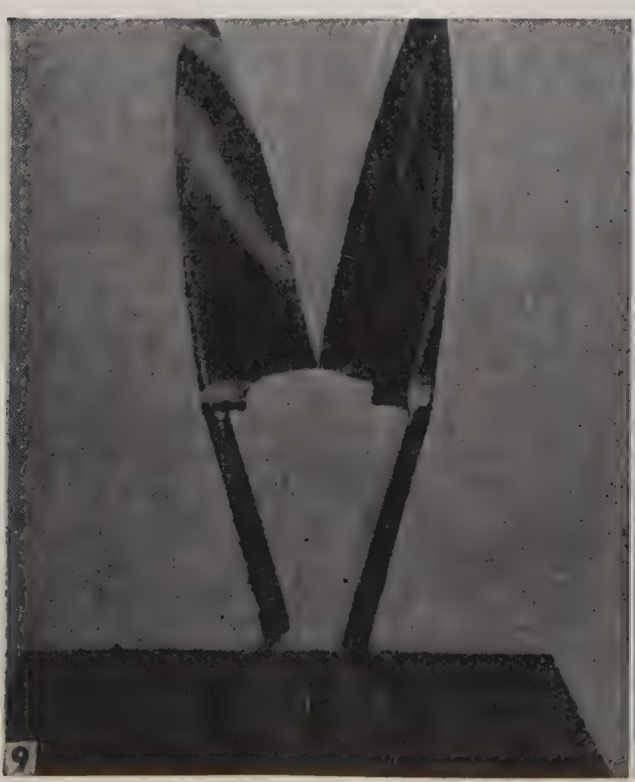
If the blades are "running too wide," the reverse motion will be applied to the wrench, and this forces



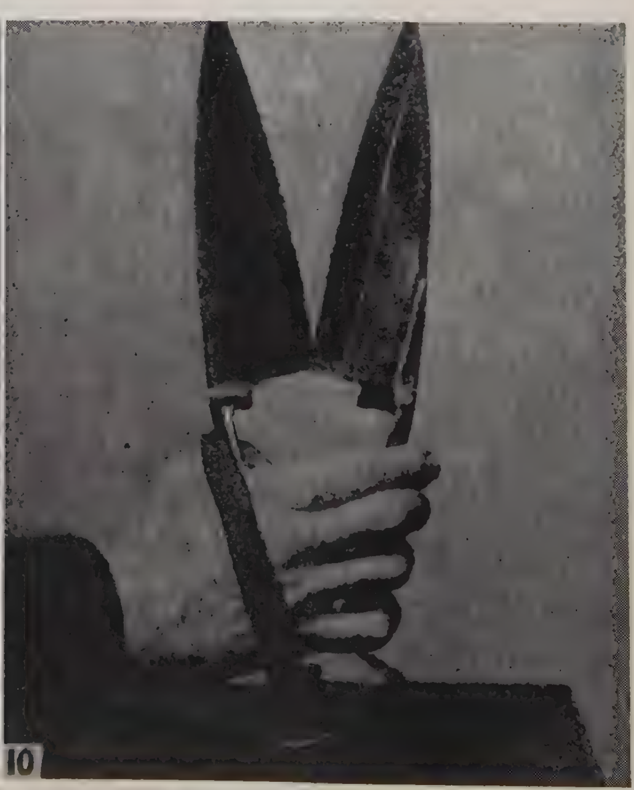
7. Piece of leather and string to cover knocker.



8. Cover in place before trimming down.



9. Cover in place after trimming down.



10. Showing fit of driver.

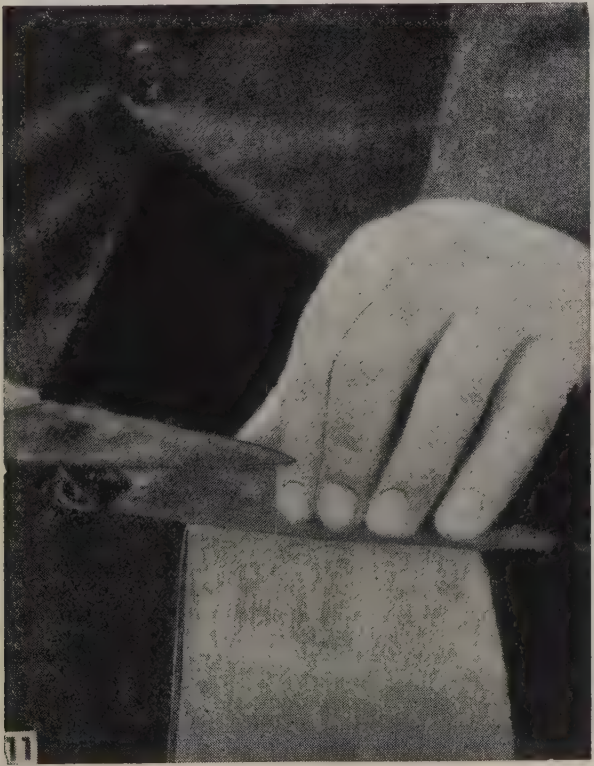
the free blade towards the fixed one. Should the operator examine a new pair of shears before setting he will see the desired set.

The Knockers

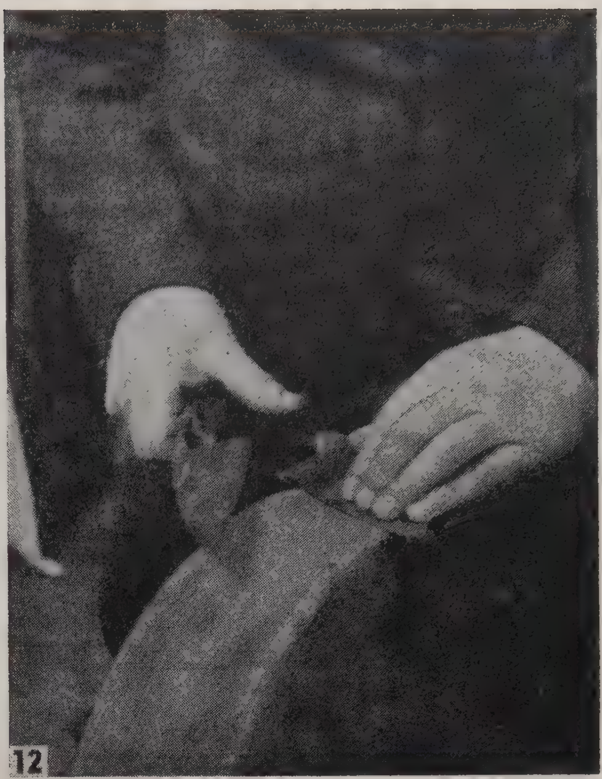
The cutting out of a small piece of metal (Fig. 6) from the knocker and substituting a piece of leather or other material are said to prevent jar on the operator, although the main function is to eliminate the excessive noise which occurs when two pieces of metal repeatedly come together. A small piece of metal about ¼in. from the edge is first taken out of each knocker with a hacksaw. When this has been completed the shears should slightly overlap at the point when closed. A piece of leather (Fig. 7) about 1in. by ½in. is then laid over the cut surface and the strings, which have previously been threaded through the leather, are tied back (Fig. 8). The knots should be tied underneath so that they will not be in contact with the shearer's hand. After adjusting the leather the shears when closed should be nearly meeting at the point. The leather is then trimmed (Fig. 9) so that the bottom edge of the opposite blade will not touch the knocker when closed. Sometimes a piece of cork set in with sealing wax is used instead of leather.

The Driver

The driver consists of a piece of webbing or light pliable leather formed into a loop into which the hand fits, enabling the shearer to retain a firm grip on the shears and to assist the blades to open without losing control. The driver is fitted either from the top of the handle of the top blade to the bow of the bottom blade, or from the handle of the top blade to the junction of the bows (Fig. 10). The material is firmly tied with seaming twine, which is bound tightly round the bow and the driver at each end.



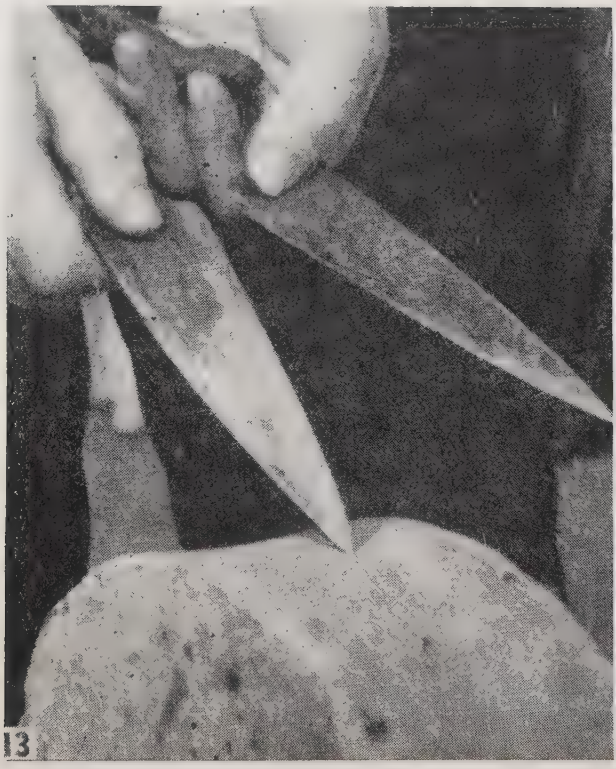
11. Blades on grindstone.



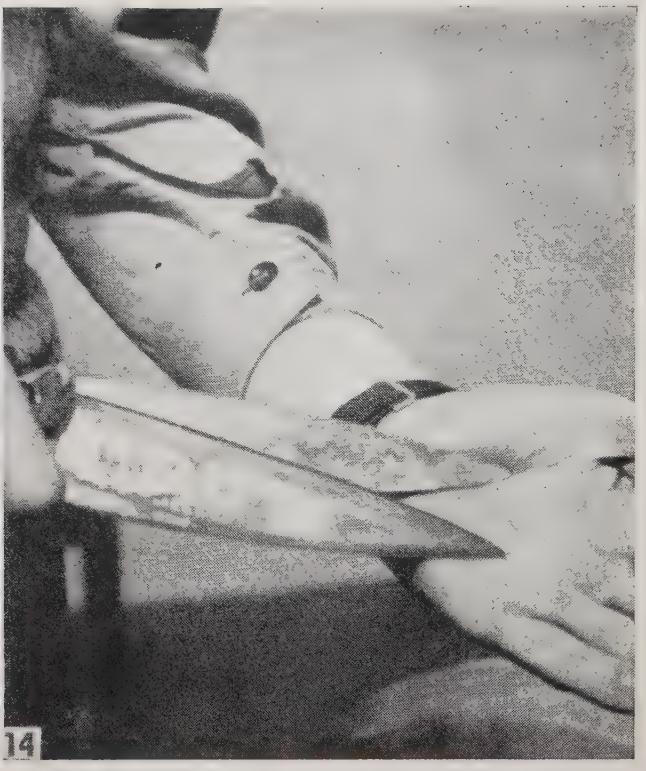
12. Grindstone, showing general position of body.

Sharpening Blades

A grindstone is used to put a sharp edge on each blade and the stone used should preferably be even across the top, without any dip or bump in the middle. Each blade should be held flat across the grindstone with a good solid grip (Fig. 11), the left arm held in at the side and the bow of the shears resting on the body (Fig. 12). The thumb of the right hand is braced on the knocker of the blade on the grindstone to give leverage to the fingers of the right hand, which hold the upper blade away from the lower one during grinding. As the grindstone revolves, the blade should be gradually moved across from left to right and back from right to left so that the whole blade is engaged on the grindstone evenly. Grinding is continued until one can just see a thin white line running down the edge of the blade. The chisel edge so formed should not be more than about ¼in. wide for a start. Each succeeding sharpening will take it further back. If the blade has been held evenly on the grindstone, it will not be over-ground in one part and under-ground in another, and the thin white line will be of an even width along its entire length.



13. Taking off points.



14. Testing points on hand.

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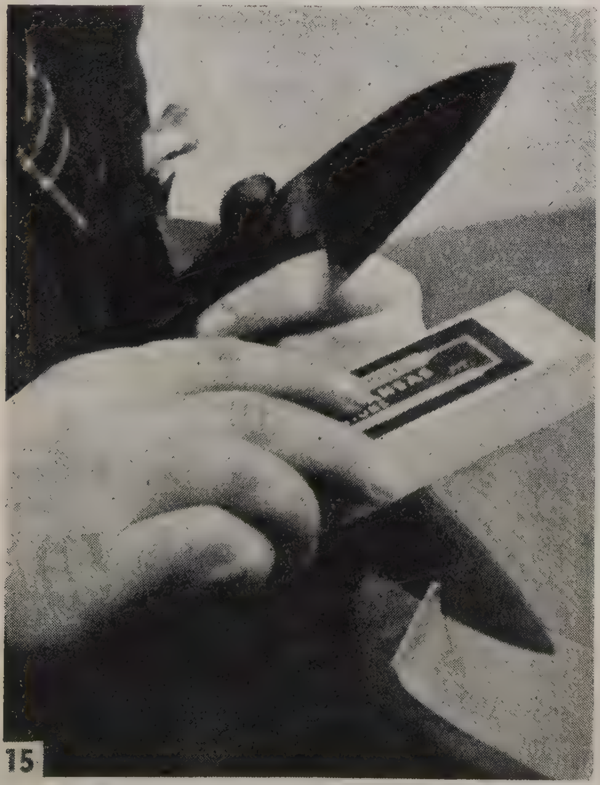
After both blades have been ground the sharp points of the blades should be taken off on the grindstone (Fig. 13) so that the points do not catch the skin of the sheep, which could cause a good deal of damage. The points are tested on the hand for sharpness (Fig. 14).

The Oilstone

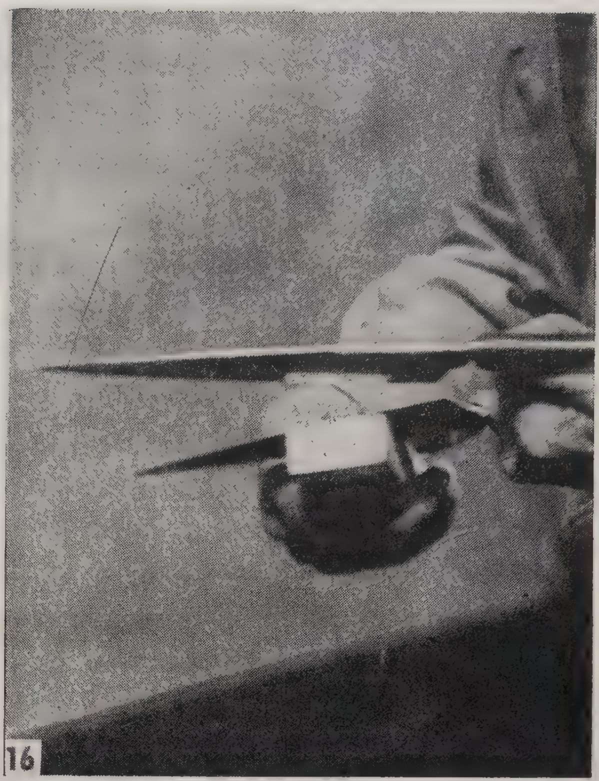
After a satisfactory edge has been put on by the grindstone it is necessary to use a fine oilstone to take the roughness off the blades and to put on a short bevel with a razor-like edge. This is done merely to obtain a fine finish and should not be used for work which can be done more satisfactorily and more easily on the grindstone. A notched peg is often used to hold the blade when using the oilstone (Fig. 15). After using the oilstone on the sharpened edge it is necessary to "back off" so as not to leave a rough or feathery edge. Backing off is done by drawing the oilstone flat (Fig. 16) across the back of the blade, starting at the heel and going to the point.

General

Having satisfactorily sharpened and set the shears, the learner may proceed to try his hand at shearing. In this it is important to keep the blades sharp and immediately to correct any fault which may become apparent. The blades may need slight adjustment with the wrench as described, or the "driver" may not be to the shearer's liking and should be altered to suit the hand. A quick wipe over with the oilstone is desirable after each sheep, but at mealtimes and "smoke-o" a little more attention should be given to the shears. Most shearers carry two or three pairs and do them up each night.



15. Oilstone for finishing off sharpening. Note notched stick on which to rest blades.



16. Backing off with oilstone.

The shears must be ground every night to take off the bevel edge previously put on by the oilstone, but when shearing "hard" sheep, when a lot of oilstone sharpening is required, the shears may have to be ground more often.

EUROPE.

As a result of wartime disorganisation of transport facilities, the accumulated effects of fertiliser shortage, lack of manpower, destruction of livestock, losses of tractors, destruction of levees and dykes, and temporary disorganisation of production caused by the redistribution of large estates in Poland, Hungary, Rumania, Yugoslavia, and Italy, combined with destruction of processing plants, Europe remains desperately short of food. It has been calculated that on the basis of European production millions of Europeans would be on but half of pre-war intake of energy foods, and that 12 million short tons of food will be required to be imported during 1945-46. Wheat, fats, animal protein foods, and sugar are most urgently needed. Depending on the availability of shipping, the wheat situation might be met from Canada and the United States, but there appears to be a world-wide shortage of the other items.

—*Foreign Agriculture U.S.D.A., June, 1945.*

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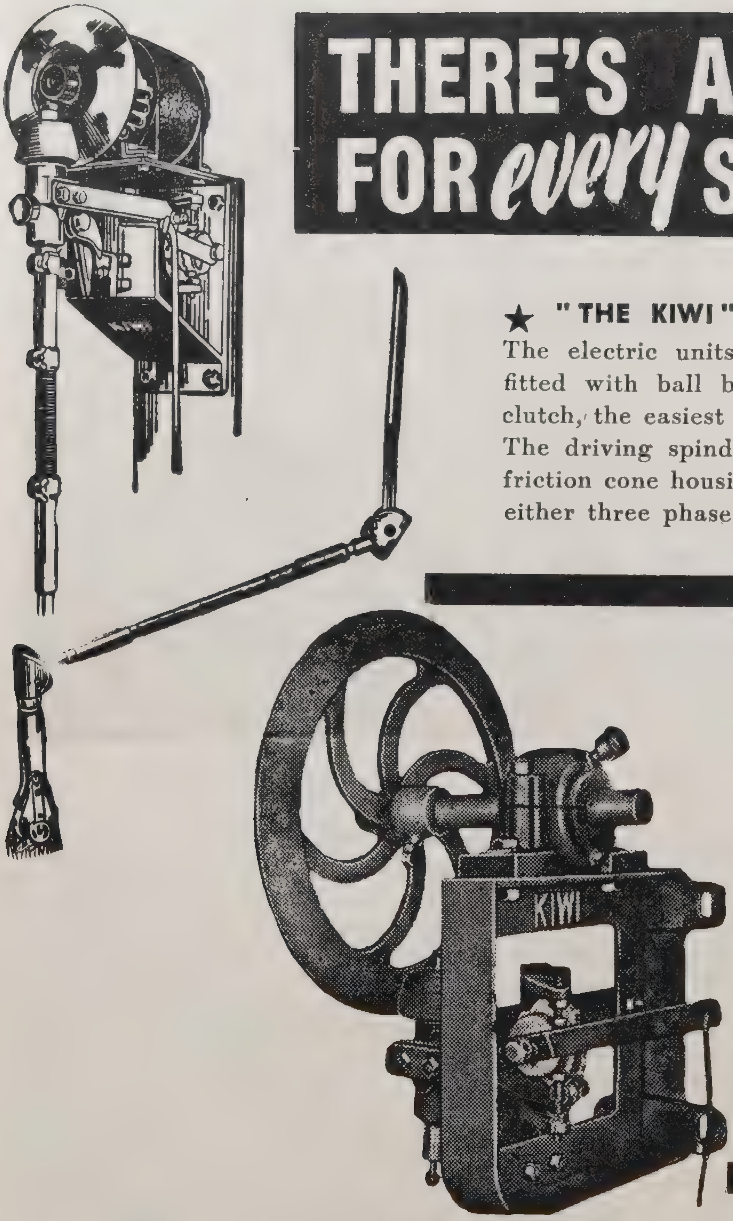

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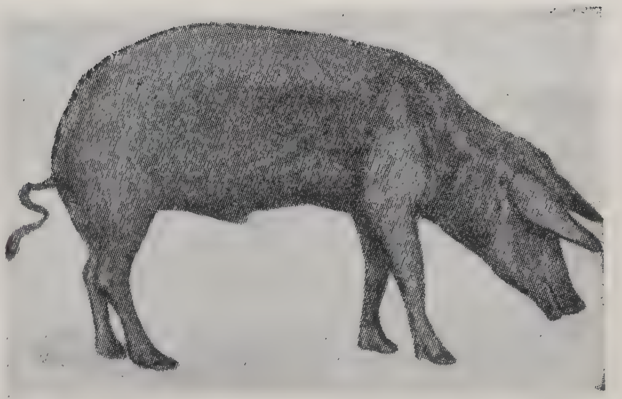
The Origin of Pig Breeds

THE history of the origin of pig breeds is an integral part of the progress of the pig industry, and information on particular breeds is frequently sought. In this article H. M. Peirson, Superintendent of the Pig Industry, Wellington, and I. H. Owtram, late Supervisor, Tairawhiti District Pig Council, answer some of the questions more frequently asked, and though a great deal of detail cannot be given about each breed, the subject should be of great general interest to breeders and others connected with the industry.



Middle 18th Century Tamworth boar.

THE pig was the first of the domestic animals to be introduced into New Zealand, in 1771. For 50 years or more pigs roamed the country in a wild or semi-wild state. They were hardy and prolific animals, and managed to maintain themselves and greatly increase their numbers. It was not long before pigs provided the staple meat supply of the Native inhabitants and the early settlers.

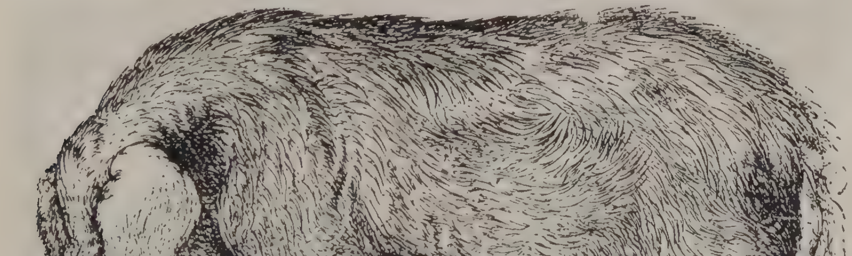
The domestic pig in New Zealand is the result of importations over the past 50 years from England, Australia, Canada, and the United States, and it is doubtful whether any direct relationship can be claimed to the original Captain Cooker of 1771.

In New Zealand there are four breeds of pig in general use—the Tamworth, the Berkshire, the Large White, and the Large Black. As all these breeds originated in England, they will be dealt with first. There are also a few Duroc Jersey pigs, an American breed, here, and a few comments will be made about this breed too. By far the most prominent breeds are the Tamworth and the Berkshire; in fact the first cross of these two breeds can be truly said to be the pig that is mostly produced in the Dominion.

All breeds known today originated from the wild pig. This animal is well distributed over the earth, and varies to a certain extent in colour and size, according to the conditions prevailing in its natural habitat. Its colour varies from black and grey to chestnut, according to the natural colour scheme with which it has to blend. The actual origin of our pigs was the European wild pig, which is a rusty grey when young, turning to chestnut as it matures.

The Tamworth

The Tamworth, which is generally considered to be the oldest of all the breeds in use, is probably a direct improvement on the original wild pig common in England. As long ago as 150 years it was well known in the Midland counties, particularly Staffordshire, and takes its name from the town of Tamworth in that county. About 50 years ago, when the bacon-curers in England started the campaign against the then fashionable short, fat, and heavy-forequartered pig, which carried two-thirds of its weight in the fore-end, the least valuable part of the carcass, the Tamworth was selected by various breeders as the type of pig to cross with the short, fat pigs, to render the carcass of more value to the bacon-curer. One of the most successful of these breeders was a Mr. G. M. Allender, and another was Lord Auckland, after whose father the City of Auckland was named. About this time a separate class for Tamworths was provided at the Royal Agricultural Shows in England, and the modern type of Tamworth really started. It is quite possible that the pigs Captain Cook is credited with having liberated in New Zealand were of the old Tamworth breed. The variations in colour seen in the Captain Cooker of today are due to all sorts of crosses with pigs of other breeds that have escaped into the bush. Actually there is not a great deal of information available about the improvement of the Tamworth.



Old English Berkshire hog.

The Berkshire

However, quite a lot seems to be known about the Berkshire breed. It will probably come as rather a shock to Berkshire enthusiasts today to learn that the breed, as known in England for many years, was a very large pig of a reddish brown colour spotted with black, and with large flop ears. In other words, it was as different as it could be from the modern Berkshire. The first step in the improvement of the breed seems to have taken place some time in the 1750's. Tradition asserts that it was effected by a cross of the black or deep plum-coloured Siamese boar on the old type of Berkshire that has just been described. Other sources state that a cross with a pure-white or spotted-white Chinese boar was used, and it is probable that both these reports are true. The progeny of the above crosses was then bred together, and by careful selection the

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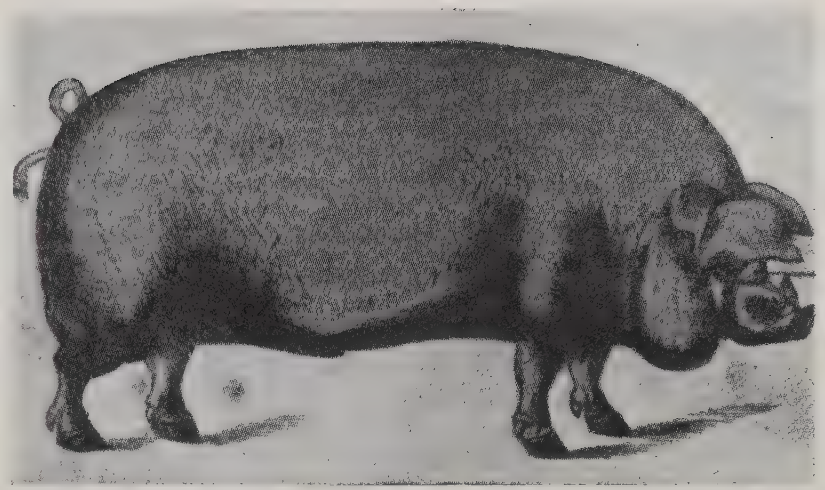


Tuley's Large White.

modern type was evolved. In view of the fact that the Siamese pig is described as plum-coloured and that in 1841 the most favoured colour among the best breeders in Berkshire itself is also stated to have been a deep rich plum colour, it is more than likely that the brownish tinge, or even deep chocolate colouring, which is sometimes seen in the pure-bred Berkshire today in New Zealand, is a throw-back to this so-called plum colour, and not, as is sometimes maintained, due to a cross with the Tamworth. One of the outstanding features of the Berkshire has always been its early-maturing properties, and this factor has been carefully preserved.

About the middle of the last century the Berkshire breed became very popular in America and Canada, and large numbers were imported from England. Here the breed was worked on and adapted to the needs of the trade in these countries, first with a view to lard production, for which it was crossed with other breeds, and later for bacon production. As a result of this later development, the so-called Canadian Berkshire was produced, which is considered in New Zealand almost a distinct breed. This is probably not the case, as the Canadian type may be the product of careful selection within the breed. Photographs of some of the prize-winning Berkshires in England, taken 50 years ago, show a type almost exactly similar to the Canadian type, as it is known in New Zealand today, especially the head, which is definitely not of the extremely short and snub-nosed type, which certain breeders in England made, or attempted to make, fashionable 25 to 30 years ago.

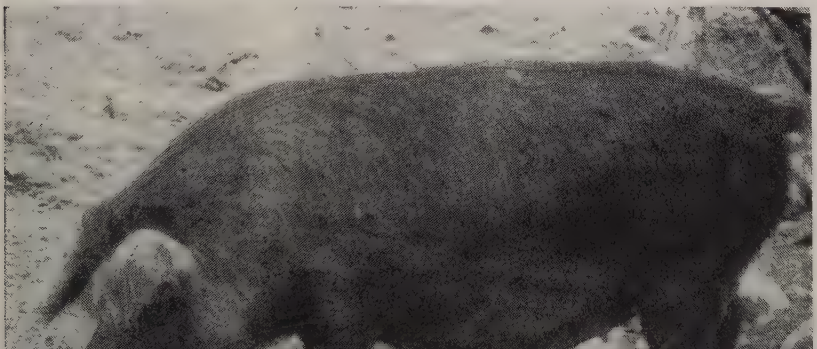
In dealing with the use of the Berkshire in the United States, it is interesting to note that it was used to improve the Poland-China breed in that country. The modern Poland-China pig is of the same colouring as the Berkshire, namely black with white feet, blaze, and tail tip. The old Poland-China was a black and white pig, and the interesting thing is that among the Maoris on the East Coast there are pigs which they call Kuni Kuni that correspond in type and colouring to the old Poland-China, and it seems very probable that they are descendants of pigs of that breed traded with the Maoris in the early days by American whalers operating in New Zealand waters. These pigs are of a very short, immensely fat type, and were highly prized by the Maoris, which would account for the way in which they have persisted.

Large White, or Yorkshire

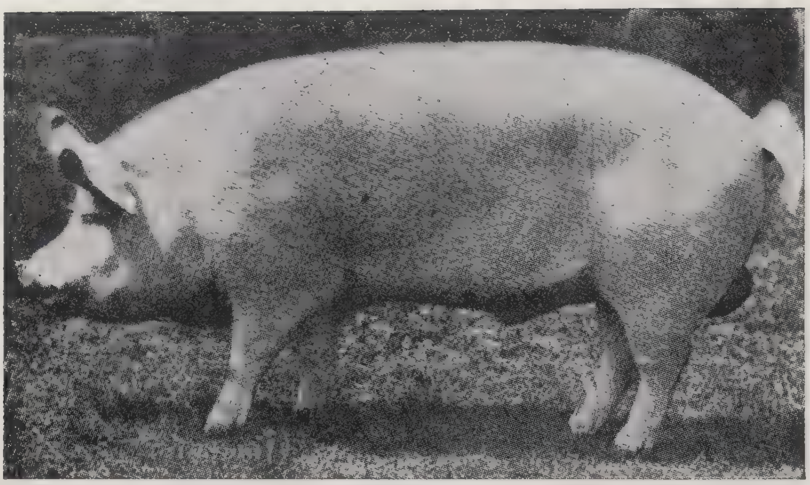
The Large White, or Yorkshire, as it used to be called, and by which name it is still sometimes referred to, is claimed to be one of the oldest breeds. The origin of this breed is to be found in the white pigs that have been bred in the North of England for some hundreds of years. There were originally three more-or-less distinct breeds of these white pigs, namely, the Large White, the Middle White, and the Small White. About the middle of last century they became very much mixed up, but during the last 50 years the three breeds have been kept distinct, and the Small White pig has almost disappeared. There are some very amusing, not to say astounding, reports of show results in these breeds about 80 years ago. One of these records that the same white pig in three successive years was awarded a prize as the best of its kind and year, in the three different breeds. The first year it was a Small White, the next year it was a Middle White, and finally it finished its show career in the third year as a Large White. On another occasion a sow received a prize as a Middle White, while two of her sons were prize-winners in the Large White class. This will show to what an extent the breeds were mixed at this time.

The breeding of Large White pigs was, and is, exceedingly popular in the North of England, and it is impossible to pick out any individuals who were particularly responsible for its improvement. Large numbers were exported there under their own names, and were also used to produce various local breeds of pigs, namely Chester Whites, Jefferson County, and Victorias, to mention only a few.

During the last 50 years Large Whites have become very popular in Northern Europe, and have been used extensively to improve the local breeds in Denmark, Holland, and the Baltic States. This is the world's bacon pig. In



Captain Cooker.



Large White boar.

every important bacon-exporting country either one or both parents are Large Whites. It is almost a universal experience that these pigs, kept under suitable conditions, make more growth than any other breed. The Middle White is still popular in England today, but is not used as a distinct breed in New Zealand.

Large Black, or Devon

The fourth breed that is in general use is the Large Black, or Devon, as it is sometimes called. This pig, with slight variations in size and characteristics, has been bred in the South of England for many years, and was known as the Sussex, Hampshire, and Dorset, as well as the Devon, the name varying with the locality in which it was bred. These breeds differed mostly in size. All had more-or-less the same slate colour, and were almost devoid of hair. This last characteristic varied a great deal, but when any quantity of hair was present it was always very fine and silky. This same point is seen in the Large Blacks today.

It is most probable that the colour and general improvement of the breed were due to the use of what was known as the Neapolitan pig. This was a pig that had been bred in Italy, particularly in the districts around Naples, for hundreds of years, and was probably a descendant of dark eastern swine imported by early Italian voyagers. Some authorities maintain that the pig used in the making of the Large Black was the Essex, or Small Black, but even if this was so, it is fairly certain that the Neapolitan was used in this Small Black breed. The flop ears originated in the original native breed on which the black pigs were used.

Duroc Jerseys

There is some interesting information on the origin of the Duroc Jersey breed. Red pigs had been bred in the State of New Jersey, U.S.A., for some 50 years in 1872, and went by the name of Jersey Reds. Their origin seems to be unknown, but was in all probability due to importation in the early days of pigs of the old Tamworth variety. These were improved by judicious breeding, and a particular family of them bred in Sarratoga County, New York, became known as Durocs. The origin of the name is not clear; possibly it was the name of a particularly successful breeder. In 1883 at a place called Elk Horn, Wisconsin, the Duroc or Jersey Red Swine Club was formed, and since then the breed has been known as the Duroc Jersey.

Evolving Local Breed

The time may come when there will be evolved in New Zealand a local breed of pig that fills the bill with regard to our climate, conditions, and feed supply. For some years now breeding experiments have been carried out with a cross between the Large White and Tamworth, in an endeavour to establish a New Zealand breed. While certain progress has been made, the experimenters have had their disappointments, as is to be expected, and it is for this reason that no information is available regarding the new Lincoln Reds. It seems highly probable, however, that from the results obtained so far a good deal more will be heard about this new breed during the course of the next few years.

◆

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Berkshire boar.

QUARANTINE

Its Role In Prevention And Control Of Animal Diseases

QUARANTINE in its broadest sense covers all regulatory measures instituted by Governments to prevent the introduction of the more serious diseases of animals. It also includes internal regulatory measures for the control and prevention of spread of diseases already existent, or of recent introduction. In its literal interpretation quarantine means detention and isolation of livestock newly landed from a ship for observation and testing, or in order to keep such livestock apart from other livestock for a prescribed period. The term today, however, usually includes all measures designed to prevent the introduction of infection through any channel whatsoever; it thus becomes very wide in its ramifications, covering aspects frequently remote from the living animal. Thus at times restrictions imposed on the introduction of certain things having no apparent relation to the live animal are not readily understood, yet may in themselves be far more dangerous as a means of introducing infection than the living animal.

Careful Watch in N.Z.

The administration of measures to prevent the introduction of serious animal diseases from overseas is thus an important function of the Department of Agriculture, requiring ever-watchful attention to cope with present-day conditions of rapid transport, the dangers resulting from the interruption to normal trading, and the tendency to breakdown of established precautions as a result of the war. We in New Zealand must consider ourselves extremely lucky that so far we have escaped the introduction of one or other of the serious animal diseases existent in countries not so remote from our shores. No one is probably more appreciative of this element of good luck than the officers of the Department responsible for the administration of precautionary measures.

The development of quarantine throughout the older countries of the world became a necessity following on the disastrous losses occasioned by the ravages of the more virulent animal plagues in those countries. The history of those early losses provides fascinating reading, and illustrates the slow but developing recognition of veterinary sanitary service in controlling such disasters. The following extracts from a very old authority, Fleming's "Veterinary Sanitary Science and Police," serve to illustrate the happenings of those early periods.

In Great Britain up to the time of the invasion of the cattle plague (rinderpest) in 1865 it may justly be said that veterinary sanitary science, except in the Army, had no existence so far as the prevention of contagious disease is concerned. In 1865 cattle plague was introduced into England, and in October of that year it was calculated 17,000 cattle had become affected. In November only four counties in England were exempt, and the disease was present in 19 out of the 33 Scotch counties. Further, during 1865 and 1866 some 279,000 cattle were reported sick, and 233,000 died or were killed. Up to 1869, for 30 years since the introduction of the two contagious maladies foot-and-mouth disease and bovine pleuro-pneumonia, it was estimated that the loss from these alone amounted to five and a half million cattle, roughly valued at eighty millions sterling.

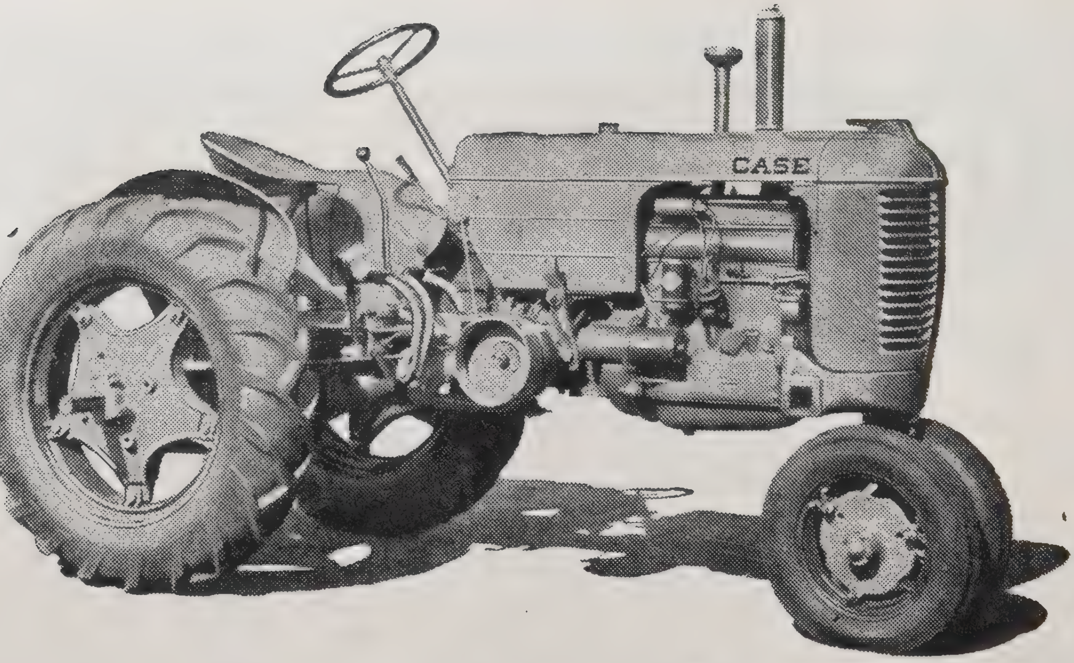
WHILE New Zealand has been fortunate in escaping the more virulent livestock diseases of other countries, in assessing the Dominion's present favourable position great credit must be given to those responsible for the early introduction of import regulations and the adoption of vigorous and severe control measures when outbreaks of disease occurred.

This survey of the history of stock diseases and quarantine regulations in New Zealand by W. C. Barry, Director of the Livestock Division, should be of great interest to all concerned with the welfare of our livestock industry.

In or about the period mentioned in this quotation stock was being imported to New Zealand. The danger of introducing serious disease from Europe must, therefore, have been very great, and New Zealand must indeed be considered fortunate in that only two major diseases were introduce, bovine pleuro-pneumonia in 1864 and sheep scab earlier. Happily, pleuro-pneumonia did not persist, and was either stamped out or died out. It is recorded that a slaughter policy was put into operation in the district of the South Island into which the disease was introduced. A veterinary surgeon, the late Mr. Alexander Hamilton, M.R.C.V.S., who was located in the district, diagnosed the disease, and on his advice a slaughter policy was enforced, with the fortunate result of disappearance of pleuro-pneumonia. Australia was not altogether so lucky. History records that pleuro-pneumonia was seen in Victoria in 1858, and was recognised by the late Mr. Henry Wragge, M.R.C.V.S., who advised the Government of the day to slaughter all the cattle involved. This advice was not acted upon, but instead a Royal Commission was set up to inquire into the matter. Had the veterinarian's advice been acted upon in Australia, as it was in New Zealand, Australia would most likely have been spared a costly legacy.

Early Legislation

Legislative authority to deal with cattle diseases at this period in New Zealand was contained in the Diseased



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Cattle Act of 1861, and it is of interest to note the definition of "disease" in that Act, which reads as follows:—"Disease: The diseases called pleuro-pneumonia, rinderpest, foot-and-mouth disease, or any other infectious or contagious diseases which may hereafter be brought under this Act by proclamation in the New Zealand Gazette." The inspectors appointed under the Diseased Cattle Act of 1861 were not qualified veterinarians.

The measures which resulted in the complete eradication of sheep scab from New Zealand stand as a permanent memorial to the men responsible for what must be recorded as an outstanding achievement. Sheep scab was known to have been existent in New Zealand before 1850. Records exist of its introduction into the Nelson district in 1850 in sheep imported from Australia, and its distribution in the years following became extensive.

The first public dip was erected in Canterbury in 1857. In November, 1878, the Sheep Act, defined as "an Act to provide for the eradication of scab in sheep," became law. One is filled with admiration today for the people responsible for its production, the detail and thoroughness of the measures prescribed being exemplary. Inspectors appointed under the Act were known as Inspectors of Sheep, and their powers were obviously not limited.

The fight went on for seven years. Dipping, and later wholesale slaughter, were vigorously enforced. The last cases were seen in 1885, seven years after the passing of the Sheep Act. Thus, the intention of the Act "to provide for the eradication of scab in sheep" was fulfilled.

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Two extracts from the Sheep Act are worth quoting. The first is the definition of the word "destroy," which is "to kill and bury at a depth of not less than two feet under the ground, or consume by fire, or boil down." The second is a warrant for herding or yarding sheep under Section 28, and reads:—

THE SHEEP ACT, 1878—SECTION 28.
Schedule C.—Warrant for Herding or Yarding Sheep.

District of
New Zealand, To ....,
To Wit. and all others whom it may concern.

WHEREAS it appears to me,..........., Inspector of Sheep, upon my own view, that certain sheep are depastured upon land situated at ...., being in the occupation of ...., of ...., in the said district, and that such sheep are infected with the disease called ...., and that there is a danger lest such sheep, being suffered to run at large, should cause damage to the owners of the sheep in the neighbourhood thereof: These are therefore, in the name of our Lady the Queen, and in pursuance of the provisions of "The Sheep Act, 1878," to require you that you do cause the said sheep to be constantly herded by day and to be kept by night within a sheep-proof enclosure; and I do hereby require all persons having or being concerned in the charge, control, or management of such sheep, to aid and assist you in causing the same to be constantly herded and enclosed, according to the provisions of the above-recited Act in that behalf made.

Given under my hand at .... in the said district, this .... day of ...., in the year of our Lord one thousand eight hundred and ....

....
Inspector of Sheep.

These quotations indicate the merit of a pioneer piece of legislation in control of animal disease.

The eradication of sheep scab in Australia was an equally meritorious performance. Not enough appreciation appears to be given to the fact that two such prominent sheep countries as Australia and New Zealand were able to eradicate and keep their flocks free over the years from a parasitic sheep disease which is productive of great economic losses in practically all other countries.

The "Gilruth Era"

The period in the history of animal disease control in New Zealand which began in 1894, at the time of the first appointment of official veterinary control, may be referred to as the "Gilruth era," for undoubtedly the genius and foresight of the late Dr. Gilruth played the most important part in the control of animal disease in this country during the years of his stay here. The control regulations inaugurated by Gilruth saved New Zealand from stock losses which it would be difficult to compute in pounds sterling.

The control of anthrax affords interesting study and cannot help but evoke appreciation. From the time of

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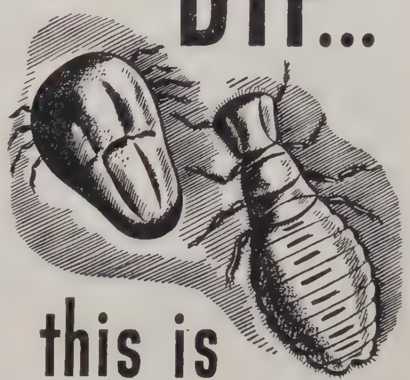

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his arrival Gilruth had recognised the presence of anthrax, the first cases being seen in the Auckland Province. During 1899 four outbreaks occurred, one in the Bay of Plenty and three in Taranaki. Even earlier than this Gilruth had concluded that the infection was being introduced in imported bone manures, either green-bone manure or that which had not been sufficiently sterilised. An extract from his report of 1900 reads: "We have come to the conclusion that the introduction was due to the importation by some means of infected bones, for the following reasons:—

1. The outbreaks occurred on turnip paddocks;
2. These paddocks formed only a small area of the farm;
3. The stock on other paddocks on the same farms were unaffected;, unless indirectly from the turnip paddocks;
4. All these paddocks had been recently dressed with manure containing a proportion of bones;
5. It was only when the turnips were eaten fairly well down that the disease appeared, that is, when it was possible that the soil had gained entrance to the system with the feed; and
6. The manures were all supplied by the same firm, which is one that imports large quantities of Australian bones.

"Raw bones imported from Australia are landed in sacks, taken to certain premises, where they are sterilised under pressure at a temperature of 250° F. for two hours. The introduction of anthrax, however, proves that these precautions have been insufficient."

From 1900 to 1907 outbreaks of anthrax were reported from widely-separated parts of the North Island, and an outbreak was confirmed in Southland in 1903. Meanwhile regulations prescribing specific sterilisation (281° F. for three hours) of all bone manures from India and Australia had been introduced, a New Zealand officer being stationed in India to supervise this procedure. Later on import of bone manure from India ceased. Concurrently with this, cases of anthrax in New Zealand decreased, its occurrence eventually disappearing altogether. For practically 20 years following 1907 no anthrax was recorded, which can definitely be attributed to the action taken regarding importation of bone manure. Of later years two outbreaks in the Auckland Province could be regarded as recrudescence of infection on farms where the disease had occurred previously. The last occurrence of anthrax took place in 1944, on a dairy farm in the Manawatu district, resulting in the death of 13 cows. In this instance the actual origin of the infection has not been satisfactorily determined.

Swine Fever

The virus diseases present the most formidable difficulties in quarantine control. The presence of swine fever was recorded by Gilruth between the years 1895 to 1902. For 30 years following New Zealand enjoyed complete immunity from this serious disease of pigs. In 1933, however, an outbreak occurred among garbage-fed pigs in the environs of Wellington. The following extract from the writer's annual report of 1933 summarises the features of the outbreak:—

> **Swine Fever:** An outbreak of this disease during the year on some farms in the Johnsonville and Lower Hutt districts, near Wellington, has to be recorded. A brief history of the outbreak is as follows: During May investigation of some reported mortalities in pigs in the Johnsonville district led to the discovery of the existence of swine fever, confirmation of the disease being established by blood-transmission tests carried out at the Wallaceville Laboratory. As a result of intensive inspection of all farms in the district, further unreported centres of the disease

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were located. Quarantine restrictions were immediately imposed controlling the movement of pigs, and the risk of spread was thus minimised.

The pig farms on which the disease occurred were all of the same type—viz., pig farms on which pork was produced for sale to Wellington butchers. In every instance the pigs were garbage fed, the garbage being collected from hotels, etc., in Wellington. It thus became evident from the start that garbage feeding was the means by which the infection was spread, as interchange of garbage tins from farm to farm was common. The closest inquiry failed to decide the manner in which the infection reached Wellington. The inference is very strong, however, that the virus was introduced in garbage from an overseas ship. Although it was not possible to prove the point, a strong suspicion exists that garbage from an overseas ship had in some way reached a piggery, thus conveying the virus infection in meat scraps. This remains the only feasible explanation, in spite of the fact that the removal of garbage from overseas vessels has been prohibited by regulation for some years.

The existence of the disease at Johnsonville was confirmed on May 12, and from then to July 7, when the final slaughterings took place on a farm in the Lower Hutt area, 13 pig farms were discovered to be infected. All affected and in-contact pigs, totalling 1,920, were slaughtered, and buried in deep trenches. All piggeries were demolished and destroyed by burning, compensation being paid on stock and buildings according to valuation.

The cases met with in Lower Hutt in July proved to be the last, as, although careful inspection was still maintained in the quarantined areas (Hutt and Makara Counties), no further evidence of swine fever was discovered. The first restocking with pigs took place in January of this year, and by the end of March five of the previously-affected pig farms had resumed operations. Regular inspections of those premises have been maintained, and it is satisfactory to record that all pigs introduced have remained healthy. The outbreak was successfully stamped out in a short period, thus removing the existence of a disease which, had it persisted, would prove a menace to the pig-breeding industry.

The longevity of swine fever virus in the animal tissues has long since emphasised the danger of garbage feeding to pigs, and it is now realised in countries in which the disease is endemic that garbage feeding is undoubtedly the means of perpetuation. Realising this danger, Canada some years ago introduced very stringent measures relating to garbage feeding. An experiment carried out in the United States of America in 1917 showed that in places where meat inspection was maintained it was impossible, even with the severest interpretation of temperatures, symptoms, and lesions, to remove from market all carcasses of hogs that contain hog-cholera virus. In an examination of 21 cured hams from infected no-lesion hogs virus was found in 12. The vitality of the virus persists for three months in pork and bacon and possibly much longer under certain conditions. The danger of meat scraps being brought ashore as garbage from overseas ships is very obvious. In 1930 regulations were brought down under the Stock Act prohibiting the landing of garbage from ships, and these have been enforced with as much thoroughness as possible. In 1934 entry of all meats (except cooked meats) into the Dominion was prohibited, a measure which resulted from the discovery that cured bacon and ham from England were actually on sale in Wellington. Needless to say the war years brought serious difficulties, and the dread that American pork or bacon would be brought in was ever present. In this respect we were more fortunate than Australia, which country experienced a costly outbreak of swine fever in 1942, originating in Western Australia and extending to New South Wales.

The internal control of garbage feeding in the Dominion was strengthened in 1943 by the introduction of regulations which make it compulsory on all pig-feeders to possess a licence from the Department of Agriculture to feed garbage to pigs, the main conditions of the licence involving the cooking of garbage prior to feeding.

Rinderpest

One of the most ancient cattle plagues, rinderpest, another virus infection and fortunately now confined to certain localities in Europe and Asia, was introduced into Western Australia at the end of 1923. A ship in port at Perth, from India, was believed to have had live animals on board as ship's stores, from which the infection was in some way carried ashore. Prompt recognition of the disease, with adoption of drastic measures by the veterinary authorities, resulted in eradication, and is another instance of a debt due to the value of veterinary control. During a visit to the Dutch East Indies in 1937 the writer observed the activities of the veterinary authorities there in coping with the introduction of rinderpest from Malay, in which country it is endemic. The disease had occurred in Java, but owing to adoption of vigorous methods had been eliminated, and the Dutch Islands kept free of it for some 10 years.

Rabies

Another anxiety of the war years has been rabies, which has never been seen in Australasia, which must be

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regarded as the greatest of good luck. Nevertheless, every precaution must be taken, although this is rendered doubly difficult by the long incubative period in rabies. An instance is on record of a dog developing the condition in England after release from a six months' quarantine. The surreptitious bringing in of dogs by servicemen, either by ship or plane, has been a worry during the war, and several dogs introduced in this way have been followed up and destroyed. Fortunately the landing of dogs from the United States for training for war purposes was obviated. As an added precaution the introduction of dogs from England was prohibited in 1944, a prohibition which will continue until some time after the war. This action followed a similar prohibition enforced by Australia.

Horse Diseases

New Zealand has remained immune from serious horse diseases. Glanders has never occurred here, yet it was introduced to Sydney years ago in a troupe of circus horses which had been brought over from America. On inspection at the port the existence of glanders was recognised by the late Edward Stanley, F.R.C.V.S. The affected horses were destroyed, and the remainder quarantined on an island. This happened before the Mallein test had been introduced, and it was fortunate that the disease was clinically manifest—another instance of the debt due to veterinary control.

In dealing with horse diseases mention must be made of precautions taken against the introduction of enzootic encephalomyelitis, a disease which has resulted in enormous losses in the United States of America within recent years. In 1938 no less than 184,662 cases were reported, while in 1941 reports were received of 32,872 cases and 8,210 deaths. The importation of horses into New Zealand from the United States and Canada was prohibited in 1939; the relaxation of this measure will depend on the demonstrated efficacy of immunisation, which is now largely practised in America.

Foot-and-mouth Disease

The possible introduction to this country of foot-and-mouth disease is of outstanding significance because the very great distribution of the disease and the numerous avenues through which the introduction of the virus is possible complicate the administration of quarantine safeguards. This responsibility has been greatly increased in recent years, when war conditions and various implications and dislocations have seriously endangered control measures.

Recent research has thrown much light on the characteristics of the virus of foot-and-mouth disease. Knowledge regarding its vitality and longevity outside the animal body has been disseminated, all undoubtedly assisting in the formulation of preventive measures, yet at the same time causing a degree of wonder at the immunity experienced by New Zealand and Australia over the years. The work of the Foot-and-mouth Research Committee in England previous to the war, published in a series of reports, included invaluable information regarding longevity of the virus on inanimate things outside the animal body, the duration of infectivity on hay, straw, fodder, and other commodities, occurrence in the rat and hedgehog, and its vitality in the carcasses of animals slaughtered and passed for human food in the early infective state, the last-named throwing considerable light on its repeated occurrence in England, and again em-

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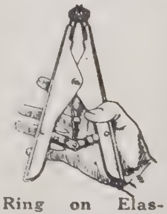

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Southdown rams from England leaving the ship in New Zealand.

phasising the danger of imported meat gaining access to garbage fed to pigs.

Before commenting on the precautions instituted in New Zealand, more particularly regarding introduction of livestock from Great Britain, it is of interest to refer to happenings in other countries. America, like Great Britain, has adopted the slaughter policy when outbreaks occur. Ten outbreaks have been reported in the United States, viz., in 1870, 1880, 1884, 1902, 1908, 1914, 1924 (2), 1929, and 1932. Explanations given regarding the origin of some of these outbreaks are of interest. In 1908 it was traced to contaminated smallpox vaccine. The extensive outbreak in 1924 was traced to pigs that received garbage from a navy yard, presumably infected from supplies of meat purchased in the Orient. The last outbreak, in California in 1932, was believed to originate in garbage from ships which had provisioned in the Argentine. Our anxiety, therefore, over the war years, in case Argentine meat should be introduced to New Zealand, or garbage from overseas ships possibly carrying Argentine provisions, can be appreciated.

An outbreak in England of a few years ago was officially pronounced to have originated through the use of pituitrin by a veterinary surgeon in a herd of cows. The pituitrin was of French origin, and its manufacture was proved to include glands from cows killed at a Paris abattoir, it being known that infected cattle were slaughtered at the time. It is of interest to note that an Import Prohibition Order introduced in New Zealand in 1939 includes in the definition of "veterinary biologies" preparations made from animal glands or tissues.

During his visit to New Zealand in 1935 the late Sir Arnold Theiler stressed the danger of introduction of infection by means other than through the live animal, holding that importation of stock under properly-controlled conditions constituted the much lesser risk. Sir Arnold Theiler also commented on the possibility of cases occurring in human beings being responsible for spread. He himself had had knowledge of its occurrence in humans, which recalled an experience in Java in 1937 when the writer was visiting a dairy farm on which foot-and-mouth disease was running its course, and where one of the milkers had experienced typical vesicular eruptions on the lips and mouth. The Dutch farmer said that in his experience this was also known to happen in Holland. Such information makes one feel that there are ways and means not usually dreamt of in our philosophy.

Great Britain was free from foot-and-mouth disease between 1895 and 1899. From 1900 to 1903 outbreaks occurred, which were localised by slaughter of affected herds. Between 1903 and 1908 the United Kingdom again remained free. Since 1910 occurrence of the disease has been recorded almost annually. However, the disease cannot be classed as endemic in a country which adopts the slaughter policy in dealing with each outbreak.

The year 1924 was a disastrous one in England. The number of outbreaks in this year totalled 1,440, the number of animals slaughtered was 88,726, and the compensation paid £1,389,697.

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Zealand has been prohibited. Stock was, however, admitted if domiciled for six months in an intermediate country from which importation to New Zealand is allowed. This period of six months was reduced in 1933 to a stay of three months in the intermediate country.

New Zealand's so-called "embargo" on the direct import of stock from Great Britain has been the subject of much controversy. New Zealand still remains the only British possession which refuses to allow direct import of stock from Great Britain. This position has resulted no doubt from the extreme dread held by a section of the farming community of the danger of introducing foot-and-mouth disease, and the insistent demands made to Governments not to alter the position. This policy is no doubt actuated by an honest fear, but it is a policy which has placed enormous additional cost and difficulties in the way of importers of pedigree stock for the past 20 years. It has also naturally created much criticism in Great Britain.

The Royal Agricultural Society of England established in 1928 the London Quarantine Station, situated at the East India Dock, London. The station, taken over by the Ministry of Agriculture, England, in 1934, was designed for the purpose of quarantining stock intended for export prior to shipment. Certain specific conditions designed to ensure absolute safety were laid down governing location from which stock were derived, transport conditions, etc. The conditions were accepted by all importing countries, with the exception of New Zealand. That no occurrence of foot-and-mouth disease has eventuated in any of the importing countries over 20 years should by now convince everybody of the absence of any risk.

During the war the London Quarantine Station was closed, but a subsidiary station was established at Glasgow. No doubt the London station will again be opened. With the end of the war New Zealand stud breeders will desire to import pedigree stock in increasing numbers if the standard of flocks and herds is, in their opinion, to be maintained.

The increasing difficulties which can be foreseen in prevention of introduction of animal diseases in future years should be emphasised. Modern means and speed of transport will make possible the introduction of animals and prohibited things by channels hitherto unknown, while our former security in distance will be imperilled by the speed of modern transport. We can, however, but express the hope that control measures, construed and administered in accordance with knowledge derived from scientific investigation of disease causation and control, will help to protect the livestock industry of New Zealand.

New Wage Rates

NEW minimum rates of wages to be paid to agricultural workers employed on dairy farms are fixed under the Agricultural Workers' Wage-fixation Order 1945, which came into force on August 1, 1945. The weekly wages are as follows:—For workers under the age of 17 years, £1/15/-; for workers of the age of 17 years but under the age of 18 years, £2/5/-; for workers of the age of 18 years but under the age of 19 years, £2/15/-; for workers of the age of 19 years but under the age of 20 years, £3/5/-; for workers of the age of 20 years but under the age of 21 years, £3/15/-; for workers of the age of 21 years and upwards, £4/5/-. If board and lodging are not provided, however, the rates must be increased by £1 a week.

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Pigs which arrive for slaughter showing marks, bruises, and weals are degraded with economic loss to the farmer. Much of this bruising and marking is caused when the pigs are being loaded for the works. Bulletin No. 175, "Careless Handling of Pigs," shows how to construct a simple loading race which will enable pigs to be loaded easily and without the use of whips and sticks. This bulletin is available free from the offices of the Department of Agriculture.

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VETERINARY NOTES

Some Commoner Lamb Ailments

SOME of the ailments to which lambs are prone, and the effects of which are reflected in the lambing percentages each year, are discussed below, and preventive and control measures suggested:—

Pulpy Kidney Disease

Lambs suffering from pulpy kidney disease are usually found dead at from one to eight weeks. Usually the internal organs appear normal when the carcasses are opened up, as the organisms present in the small intestine produce a virulent toxin or poison that causes death before visible pathological changes can take place.

The disease usually occurs when the food supply is better after than before lambing, and additional cases may occur after a change of paddock or feed. Those lambs that do not die immediately may scour, or suffer from alternating attacks of constipation and diarrhoea. Good feeding of the ewes during pregnancy is therefore indicated, and the disease can now be controlled by the use of enterotoxaemia vaccine.

Scabby Mouth

Young lambs are particularly affected by scabby mouth, also known as contagious ecthyma. An efficient vaccine can be obtained from the Animal Research Station at Wallaceville. It is easily applied, and in flocks where the disease is prevalent it can be used at marking time, thus avoiding extra handling. Animals already suffering from the disease can be treated by removing loose scabs with a brush dipped in a solution of permanganate crystals and then applying a dressing of one part tincture of iodine in two parts of glycerine. This dries the affected area and the scabs fall away, leaving clean, pink, healthy skin.

Arthritis

Arthritis is caused by an organism known as *Erysipelothrix rhusiopathiae,* which also causes a disease in pigs. Stiffness is the first sign of infection, and this is noticed when the lambs are first moved. Stiffness has occurred in lambs both before and after docking. Hopkirk observed in 1936 that the joints mainly affected were the hip joints and the bursae above the knees. The hock and stifle joints were affected less often. Antiseptic precautions, however, should be taken when lambs are docked and castrated.

Docking

In connection with the docking of lambs it has been shown in Australia that healing occurs in the same period of time whether the knife severs the tail at a joint or goes through one of the bones. The retention of a flap of skin is advantageous. Healing takes longer if the tail is cut close to the body; the younger the animal the quicker the healing. Losses will be avoided if a fresh site for carrying out docking is selected each year. An area in the corner of a paddock can be enclosed by means of hurdles and wire netting. Instruments should be boiled and the operator's hands should be clean. The lamb should be immediately returned to the paddock and placed upon its feet to avoid infection from the soil.

Dipping

It is safe to dip lambs 10 weeks old or over, and on occasions dipping so early is quite justifiable, as they may be infested by ticks and lice from the ewes. Unweaned lambs should not be dipped. The lambs, of course, are put through the dip after the adult animals, when the wash can be diluted to the requisite strength.

Mastitis in Ewes

Mastitis in sheep, as in cattle, may be caused by various germs, but the chief microbe responsible is *Staphylococcus aureus,* which usually gains entrance to the udder tissues via the teat canal, as a result of cold wet weather or minor injuries. As a rule only a few ewes in a flock are affected, and many sheep owners are unacquainted with the disease. Their attention may be called to it by the presence of a dead lamb, and in many cases the ewe recovers spontaneously, owing to the sloughing of the affected parts of the udder.

Mastitis generally occurs a few days to a few weeks after lambing, and the affected parts of the udder become cold and dark red or black in colour. In many cases a bloodstained fluid may be drawn from the teat, and death may occur during the early stages.

The usual practice is to amputate the teat or teats and to incise the affected parts of the udder in order to drain the gland. Medicinal agents, including sulphanilamide, have so far proved useless.

—*R. E. ALEXANDER, M.R.C.V.S.,*
Veterinarian, Gisborne.

Rearing Orphan Lambs

THE rearing of orphan lambs is rather a laborious process, and is best performed by some kindly and patient feminine member of the household. Sheep farmers themselves usually regard these lambs, even when progressing favourably, as a distinct trial.

The essential point is that feeding bottles must be sterile and the temperature of the contents round about body heat. The rubber teat should grip the bottle firmly, as over-enthusiastic lambs are apt to swallow the teat if it is loose. This does not appear to affect them in any way, but the constant replacing of teats can be very inconvenient. A teaspoonful of castor oil can be given at the start in order to promote the action of the bowels and clear them of mucus. If later on the lambs show symptoms of scouring, it is an indication that there is something wrong with the feeding methods.

Ewe's milk is richer in fat and solids than cow's milk, so feeding should be commenced with undiluted whole cow's milk. A little cream can be added, and in about a month's time a little skim-milk can be incorporated. Feed three or four pints daily, dividing it into six feeds. In six weeks' time a little oatmeal gruel

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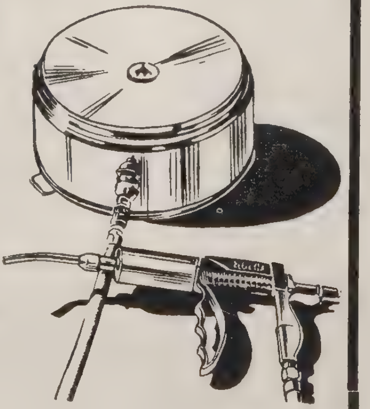

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can be added to one feed. At eight weeks a small amount of crushed oats, bran, and meatmeal can be fed dry or in the form of porridge.

Drinking water should always be available and a bundle of hay should be tied to the fence for the lambs to pick at. Sometimes skim-milk causes indigestion, in which case it should be omitted. If lambs can be taught to drink from a dish it saves much labour.

Where there are a large number of orphan lambs some sheep owners have contrived multiple-feeding devices, in which the lambs enter miniature cow bails. These arrangements, however, are best left to the patience and ingenuity of the individual farmer.

—*R. E. ALEXANDER, M.R.C.V.S.,*
Veterinarian, Gisborne.

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Answers to Correspondents

Pigs With Necrotic Ulcers

"F.A.L.," Hokitika:—

I have two pigs with very bad sores about the size of a half-crown, also some smaller ones, around the neck. The pigs go off their milk practically altogether. These two I have been treating with raw safonia and then putting on sulpha and vaseline mixed, and they seem to be improving a little. I had this trouble last season and lost about six pigs. I have since limed heavily. The sores are very smelly. Can you give me a remedy for this trouble?

Also is there any cure for a pig that seems drunk and staggers about?

LIVESTOCK DIVISION:—

These sores are known as necrotic ulcers, and are caused by a specific type of organism. Liming is useful as a preventive, but if the trouble becomes too prevalent, it may be advisable to change the pigs and sties to a clean piece of ground. If you are able to obtain a small supply of tartar emetic from your chemist, you will find the treatment and cure of the sores an easy matter. Tartar emetic is a very poisonous powder and requires to be handled carefully, so that there is no risk of any of it getting near the pig's mouth or into the trough. The sores require to be scrubbed with a brush, so as to remove as much crust, scab, and dead material as possible. The powder should be lightly dusted over each sore. Usually only one treatment is necessary in the case of small sores, but a second application is necessary in the larger cases. Sulphur ointment will not cure the sores, and the sooner the tartar emetic is applied the less will be the danger of spread to other pigs.

The pig described as being staggery and stupid may be affected with middle-ear disease, i.e., the presence of a small abscess in the ear. Although some of these cases are difficult to cure and require to be given fairly large doses of codliver oil daily over a period, the disease is preventable by allowing all young, growing pigs access to green leafy pasture, to ensure the supply of vitamins necessary for healthy growth and development. The addition of a small daily allowance of codliver oil to the younger pigs will assist in replacing the fat soluble vitamin removed in the cream from whole milk.

◆

Boils Under Mare's Saddle

"H.C.J.," Takapau:—

I recently bought a 6-year hack mare, which seems prone to get small boils under the rear end of the saddle if she has much work. I shall be glad to know if there is any treatment that would be of use in preventing them.

LIVESTOCK DIVISION:

The complaint is probably due to a local skin infection. I should suggest washing the saddle area over thoroughly, making sure the skin is wetted, with a solution of non-irritating antiseptic. The pads of the saddle should be brushed clean and wiped over with the same solution and allowed to dry. The state of pads should be considered, ensuring that they are smooth and firm with no projecting edge which might contact the skin when the weight is on. The ordinary white lotion made with ¾ ounce zinc sulphate and 1 ounce lead acetate in 1 quart of water (kept in a bottle which should be marked **poison**) can be sponged over the saddle area after each occasion on which the horse is used, the antiseptic wash being applied only about once a week.

◆

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●

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"A calf which had been dead four days was removed from a cow. The removal was successful, but the smell was very offensive. He used undiluted Dettol on his instruments, and also syringed the cow with undiluted Dettol. The result was excellent, which was far more than expected, and the cow was able to walk a little distance next day, and soon got perfectly well."

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'DETTOL'
TRADE MARK
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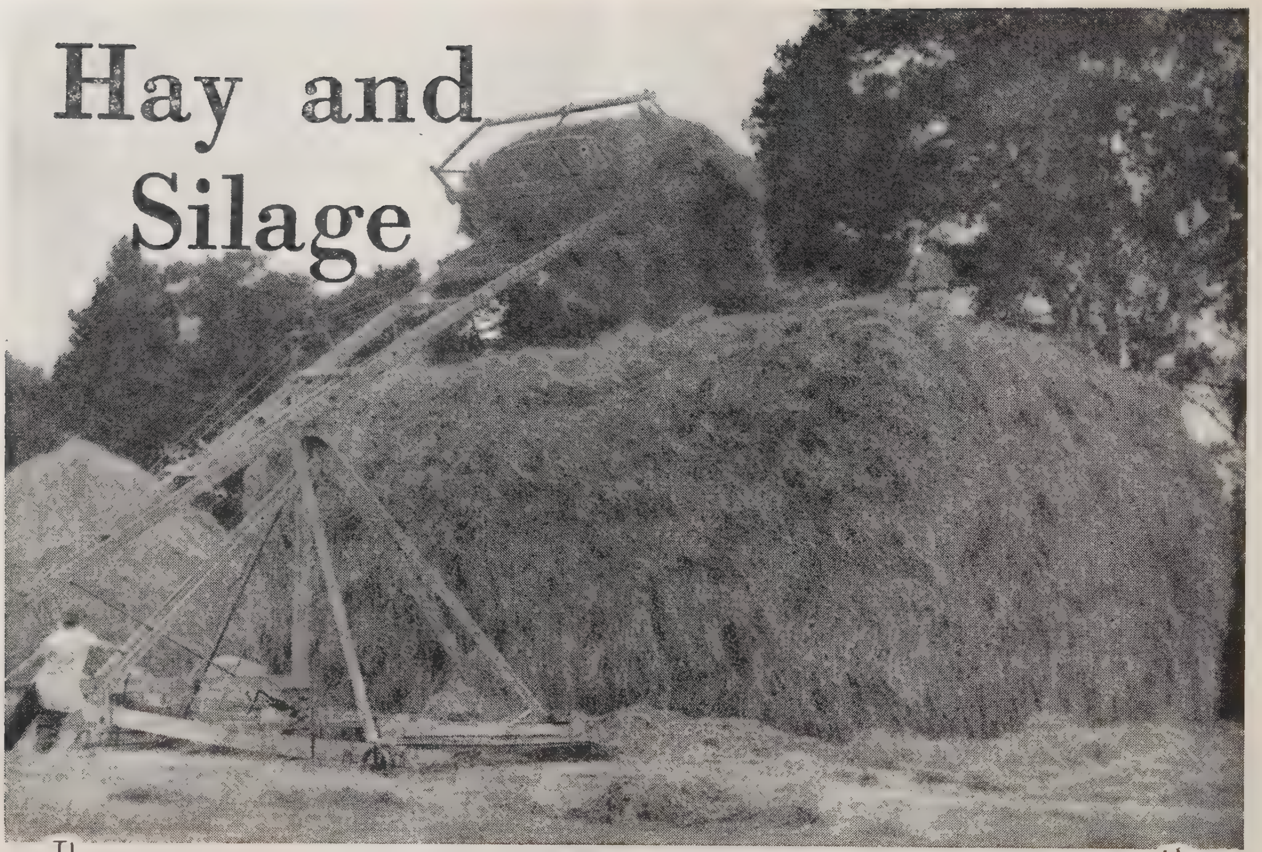
As supplied to the Royal Veterinary College, London.

Hay and Silage



Increase the area for hay and silage this season. Feed cows well in the autumn, winter, and early spring, and this better feeding will be reflected in increased butterfat production.

- ★ Close fields for silage early in the spring.
- ★ Early-cut fields produce a good summer aftermath.
- ★ Protect haystacks from the weather.

Britain requires increased quantities of dairy products. More hay and silage mean more butterfat.

SEASONAL NOTES

Lucerne

THE sowing of new areas of lucerne and the treatment and harvesting of established stands, first cuts of which are usually made in November, will be the principal work in the coming month.

Sowing New Areas

Sowing should not be undertaken until the ground is warm, usually about November, and the seed-bed satisfactory. Prior to sowing periodical harrowing is required to obtain a fine, firm seed-bed and the destruction of germinating weed seeds. Before final harrowing and rolling carbonate of lime should be broadcast at 10cwt. to 1 ton per acre, or half the quantity of burnt lime. If the seed is to be sown broadcast, 1 to 2cwt. of superphosphate per acre should also be applied. Both may be applied the same day as the seed, although some growers prefer to lime about 10 days to a fortnight before manuring and sowing.

To ensure a good even strike it is essential that sowing be shallow, practically on the surface, with seed certainly not deeply buried.

In order to avoid leaving vacant ground for weeds to strike, broadcasting after the Cambridge roller is generally adopted. Even distribution in sowing may be obtained by broadcasting half the seed at right angles to the first, using about 9lb. of seed each way. A light brush harrowing is usually quite sufficient to cover or sweep the seed into the roller marks or crevices of the soil.

Under certain circumstances, such as on light ground, the seed is drilled at about 15lb. per acre with reverted or serpentine superphosphate through every coulter, but using turnip or worn grain coulters for shallow sowing. The drilling of straight superphosphate with inoculated seed is not recommended, because of the adverse effect of the former on the culture. Some farmers cross drill, but the second drilling tends to bury the first sowing too deeply.

When sowing lucerne under irrigation, if the ground has been dry in the early spring, the land may be irrigated before ploughing and conditions carefully watched to commence cultivation as soon as practicable, while the ground is moist. Ploughing and cultivation in the direction of fall facilitates future irrigation and drainage. Too much water is apt to induce grass conditions, and lucerne is likely to die out in wet places.

Because the young plants are very tender and intolerant of competition, lucerne should seldom be sown with a cover crop. The usual rate of broadcasting after inoculating the seed is from 15 to 20lb. per acre. As inoculation may mean the difference between success and failure, it should not be omitted. When ordering lucerne culture through the mercantile firms it is necessary to state the approximate date of sowing and the quantity of seed to be treated. Instructions with regard to procedure are enclosed with the culture.

Early Treatment

A good strike of lucerne is not difficult to obtain, but as weeds may choke out the young plants, no opportunity should be neglected before sowing of killing germinating weed seeds periodically with the harrows. Once the lucerne is sown, weeds must be controlled by mowing when growth is about 12in. high and at a stage before they set seed. Fortunately most spring weeds will not persist after one or perhaps two cuttings, and the growing lucerne will then have a smothering effect. To enable the lucerne growth to come away the cut material, unless thinly spread, must be removed.

Trouble with lucerne stands often occurs about a year after sowing, due perhaps to a lack of inoculation or fertiliser at sowing time, but frequently troubles are due to unsuitable soil conditions, such as poor natural drainage or low fertility.

Cultivation

Most lucerne crops receive no after-cultivation, growers mainly preferring to sow down new areas after a stand becomes thinned or patchy from grass competition. Cultivation may be undertaken immediately after the first cut, using a grubber fitted with narrow, rounded finger tines. Discs should never be used, as they cut the crowns. Application of 1 to 2cwt. of superphosphate per acre is most beneficial at this stage, while lime may also be applied every second or third year.

In old stands some growers cultivate in the autumn and drill Algerian oats, which with the lucerne make useful silage or hay in the spring. As lucerne is winter dormant, the oats will have little effect on the stand, but will smother weed growth. There should be thorough cultivation of old stands or none at all. With a young stand, ensure that the plants are sufficiently well rooted to survive the type of cultivation intended. A cultivator may be too severe, and in the early stages even light harrowing to kill weeds may pull out many young plants, especially on loose ground. Once these are removed, they cannot

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LABOUR FOR THE COMING HARVEST

Message from the **Hon. B. Roberts,** *Minister of Agriculture.*

"The war is over and we are all delighted, but this fact has not lessened our problems nor our responsibilities, for food supplies are in great demand to feed a stricken world. The harvesting of hay, silage, wheat, oats, as well as all other crops, will soon be upon us, and the Government, as well as farmers, realises the necessity for sufficient labour for this harvest. We will not be able to obtain army labour as we have done before and therefore, must now develop a national voluntary effort to ensure the harvesting of these vital food supplies. I want the farmers, many of whom are associated with co-operative concerns, and the people who are in the towns and cities of the Dominion, to co-operate voluntarily to organise individuals or groups for harvesting work at the weekends and during holidays.

Let us unite town and country by combining work on farms with holidays and pleasure, and let us all reap a rich and abundant harvest. Do your part by volunteering through your nearest Primary Production Council."

B Roberts.

Primary Production Councils are located in the following towns in the North Island: **Auckland Province:** Auckland, Dargaville, Gisborne, Hamilton, Kaitaia, Kaikohe, Matamata, Rotorua, Thames, Tauranga, Taumarunui, Te Kuiti, Whakatane, Warkworth, Whangarei. **Taranaki:** Hawera, New Plymouth, Stratford. **Hawke's Bay:** Dannevirke, Hastings, Wairoa. **Wellington Province:** Masterton, Palmerston North, Wellington, Wanganui.

Primary Production Councils are located in the following towns in the South Island: **Nelson Province:** Nelson. **Marlborough:** Blenheim, Kaikoura. **Canterbury:** Ashburton, Christchurch, Timaru. **Westland:** Greymouth. **Otago:** Alexandra, Dunedin, Oamaru. **Southland:** Gore, Invercargill.

LEND A HAND WITH THE HARVEST

Issued by The New Zealand Department of Agriculture

EIS.A26

be replaced, as patching of lucerne by subsequent sowing is seldom successful.

Time of Cutting

Depending on soil and climatic conditions, two to six cuts may be obtained over the growing period, extending from spring to late autumn. Some growth should, however, be left to come away after the last cut. Time of cutting depends not on flowering, which varies with each cut, but on the appearance of young shoots coming away from the crowns of the lucerne plants. At this stage the old growth is at peak quality and quantity, but will deteriorate if cutting is delayed, while the young shoots growing up in the old growth will be spindly and cut back by the mower.

It is obvious, therefore, that the period for harvesting each cut is rather limited and restricts the area of lucerne that can be conveniently handled on a property. Harvesting frequently clashes with seasonal work, such as shearing, and cannot be put off for a week, as is the case with a clover crop, which, if necessary, may be utilised for grazing.

As the first cut of lucerne is usually weedy and harvested at an unreliable period for haymaking, particularly in the North Island, it is suitably made into silage; while later cuts, if weather permits, are mostly converted into hay. Conditions over the growing season are generally more favourable for haymaking in the South Island, and grass competition also presents less of a problem. Prime lucerne hay, being high in protein, has proved very valuable as a winter feed supplement to root crops in the south, where lucerne growing is rapidly increasing in popularity.

Harvesting

Lucerne is probably the most difficult of crops to cure as hay. Wind drying rather than sun drying transpires the moisture from the stems through the leaves, which remain green in well-cured hay. Sun drying with too rapid evaporation of moisture results in exposed leaves drying out prematurely and dropping off before the moisture is drawn from the stems. Unless turned, loss may be high and drying very uneven.

Weather conditions at time of cutting influence treatment, but usually it is wise to side-rake the crop into loose windrows, rather than leave in the swath. The time in the windrow is very variable in different localities and for different periods of the harvesting season. Under very good conditions lucerne may be windrowed after about 8 to 24 hours and baled only 24 to 48 hours after cutting. For hay to be fit for stacking or baling no moisture should appear when it is twisted tightly. If the baler does not pick up from the windrow cleanly, the hay would not appear ready for baling. Cuts late in the season are more difficult to bale, while in hot summer weather harvesting a dry crop during the heat of the day may occasion much loss of leaf. Fine agricultural salt will improve palatability and assist curing, but to avoid the risk of heating in the stack lucerne bales under average conditions should, if possible, be left in the paddock for about 24 hours before stacking.

Grazing

Lucerne is essentially a haying plant. Grazing tends to thin out the stand and shorten its life. Stocking consolidates the ground, which is a condition conducive to grass invasion. Injury to the crowns by winter grazing of sheep is liable to kill out or weaken many plants. There is a danger of stock, particularly dairy cows, bloating on green, unwilted lucerne during grazing.

Brassica Crops

THE green forages (rape, kale, and chou moellier) and roots (turnips and swedes) are potentially the most economic crops that can be grown to supplement grassland production. In spite of susceptibility to disease and insect pests which impair their reliability, particularly under warm humid conditions, some 600,000 acres are sown annually in the Dominion. More than three-quarters of the area in both rape and turnips and more than half the acreage in swedes, kale, and chou moellier are grown in districts from Canterbury south.

Brassica crops are generally fed off; therefore they have a low labour requirement and build up soil fertility for succeeding crops.

Rape and soft turnips are grown under a wide range of soil conditions. Kale, although more drought resistant, requires better soil than rape, while chou moellier and swedes need still better soil and moisture conditions.

Manuring of Brassicas

There is a saying, "No manure, no turnips," which applies generally to the brassicas. Superphosphate is the basis of manuring for any of these crops, but germination may be seriously impaired if too great a quantity of superphosphate is sown in direct contact with the seed in the drills. Tests over a number of years under field conditions in Canterbury showed that turnips sown with straight superphosphate in 14in. drills at 1cwt. per acre suffered germination injury by approximately 30 per cent., while with 2cwt. per acre reduction in germination was considerably greater, producing very gappy crops. Rape and other brassicas were similarly affected. Comparisons were made with reverted superphosphate and mixtures of superphosphate and carbonate of lime in equal quantities, and even the heavier quantities of these did not materially affect germination, but greatly increased yields. Young seedlings are unable to survive if strength of soil solution is stronger outside the root hairs than inside, because osmotic pressure on which the plant depends for absorption of plant food is reversed.

Water-soluble superphosphate has this effect in producing a too concentrated solution in the vicinity of seed at this critical period of germination, a condition that cannot be overcome by heavier seeding. Therefore the superphosphate should be partly reverted, either by mixing with lime or by using reverted or serpentine superphosphate.

Superphosphate and carbonate of lime mixed a week before sowing and turned three times before bagging loosely do not reset before sowing. Uneven mixing in the drill is unsatisfactory. Seed is more evenly sown through the seed plates than if mixed with manure.

Heavy production of brassicas, especially the leafy types, may be expected in soils naturally rich in nitrogen. Unfortunately it is not practicable to apply soluble nitrogenous fertilisers with the seed, on account of germination injury, and even blood may have this effect if applied in more than small amounts per acre. Blood and bone is frequently used in mixtures, but in ridged crops, where most of the fertiliser is applied below the seed and not in direct contact, no deleterious effect is experienced.

Rape

Although grown to some extent in every land district of New Zealand, and having a total annual acreage of about 200,000 acres, over half the rape crop is grown on mixed farms in Canterbury. In other fat lamb raising districts rape is rarely grown where the lambs can be fattened off the mothers or on pasture, but is required to finish off the tail-end lambs. Where supplementary crops are needed for fattening lambs there is little doubt that this crop must continue to be

Left—Chou moellier is suitable for all classes of livestock and has great availability advantages over many other fodder crops. Right—Rape fits admirably into rotations of mixed farms and must continue to be grown extensively.

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Sheepowners are advised that the following well-known brands of Powder Dip will again be available next season with DERRIS as in pre-war days.

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extensively grown, as it is difficult to replace. In the South Island rape is required mainly for the January-February period, and fits into rotations of mixed farms admirably, while building up fertility for autumn-sown cereals.

Sowing

Crops are usually sown in 7in. drills, or on heavy land in 14in. drills, at the rate of 2 to 3lb. of seed per acre. Certified seed of Broad Leaf Essex rape and Giant rape is available. As the grazing period is comparatively short, several sowings should be made for a succession of feed. In sowing, 4oz. of turnips or mustard or 8lb. of Italian ryegrass or a bushel of oats with the rape will counteract its heating tendency. To ensure that both crops mature together mustard is frequently sown on headlands when the rape is in two rough leaves. Rape should not usually be sown with permanent pasture, but is frequently sown at a reduced seeding with the short-rotation spring pastures of arable farms and as a nurse crop to pasture in Southland.

Feeding

Crops are ready for feeding off after about 3 months, when a blue tinge is apparent on the leaves. If fed before this stage, scouring is likely to occur, due to excess of protein, making lambs difficult to fatten. Time of sowing is judged so that the crop will ripen as near as possible to the time required for feeding. On the heavier land the growing period is longer, while in a wet season maturity is delayed and growth may be too rank for good fattening. Under dry conditions and on light soils yields may be very disappointing and the crop ripen off prematurely. Rape should be fed off in breaks of sufficient size to last up to a fortnight, and no permanent pasture run off provided, as this may be worm infested. Lambs should not be weaned on to rape in an empty condition, and to reduce scouring and assist fattening they should be allowed a small ration of good hay or chaff.

Second growth seldom reaches the ripening stage and is sometimes used for flushing breeding ewes. Where autumn-sown permanent pasture is to follow rape it is better to sacrifice this growth by discing and harrowing. Such a course will avoid a late establishment which may be fatal to clovers.

Chou Moellier

Chou moellier, which is annually increasing in popularity in suitable areas, may be sown from now on till February. Spring sowings in October or November provide late summer feed and the crop may be used on the dairy farm to maintain milk production. Although less satisfactory than rape for fattening lambs, the crop may be grown for autumn feed.

For winter feeding chou moellier is early autumn sown. Conditions most suitable are the same as for swedes, which crop it may replace where dry rot or club root makes swede growing precarious. Although not immune, chou moellier is very resistant to club root, and while yield is lower, the feed is more succulent and more suitable for late winter feeding or for feeding to hoggets than is the case with swedes.

Sowing

Seed may be broadcast or drilled in rows from 7in. to 28in. on the flat or ridged. The usual seeding is from 1½ to 3lb. per acre, heavier sowings being required for broadcasting or close drilling, which result in more slender stems. Government certified seed is available, there being two kinds, one a leafy type, more suitable for sheep grazing, and the other the Giant thick-stemmed variety, with a lower proportion of leaf to stem, possibly more suited for pigs and cattle.

Utilisation

The crop is suitable for all classes of livestock. In feeding to the dairy herd there is little waste if the crop is cut near the ground and carted on to grass paddocks for feeding after milking. It should be fed off to sheep in breaks, and grazed rotationally, when two or three successive growths may be obtained, but the stalks tend to damage wool. Under severe winter conditions snow tends to break down the leaves, but the crop is available when other feed may be buried. Under very wet conditions chou moellier presents less difficulty with little waste than is the case when feeding off swedes under such conditions.

Thousand-headed Kale

Thousand-headed kale has a more branching habit than chou moellier, with a higher proportion of leaf to stem, but lower total production. Certified seed of this type is also available. When sown in November the crop should be ready for feeding in February or March. A later feeding in October or November is of value only in a late district.

Turnips

In the North Island soft turnips are sown for production of summer feed for dairy cows, and in the South on light land where rape may be unsatisfactory they constitute an alternative though slower crop for lamb fattening. The sowing period ranges from late October to the end of January, but in districts where the grass-grub beetle is a menace, usually towards the end of November and early in December, young crops coming through the ground may be destroyed and crops should be timed to miss this period in the young stage. Sown about Christmas or in January, white-fleshed turnips in drier areas provide useful early winter feed. Yellow-fleshed turnips are slower maturing and should not be grown where insect damage is prevalent. Like swedes they are more winter hardy and last longer into the winter than soft turnips.

Swedes have a long growing period and may be sown in October or November in swede areas of the South Island, although they are frequently sown after Christmas in the North Island. Where crops are likely to be affected with mottled heart borated basic superphosphate should be the fertiliser used.

Ridging is the most popular method of growing swedes and yellow-fleshed turnips, especially under damp conditions, but soft turnips are commonly sown on the flat in 7 or 14in. drills at about 9oz. of seed per acre.

Seed has been produced in the Dominion during the war because of difficulties of procuring supplies from overseas, and Government approved lines of seed available are grouped as follows:—

White-fleshed turnips are available under the following classification:—N.Z. Purple, Red or Green Globe, the first two being early varieties and Green Globe corresponding to Hardy Green Globe.

Yellow-fleshed turnips are sold under N.Z. Green Top and Purple Top Yellow, also N.Z. Green or Purple Resistant, which are more resistant to club root.

Swedes are grouped under N.Z. Superlative, Grandmaster, Crimson King, Resistant, and Sensation, the last-named being white fleshed.

Field Carrots

CARROTS as a fodder crop are valuable for all classes of stock. In the South Island they are also used extensively in rabbit poisoning. Although somewhat exacting as regards soil and labour requirements, heavy crops of 30 to 40 tons per acre can be grown on deep sandy loam with good natural drainage under a reasonable rainfall. If soils and cultivation are shallow, forking of the roots is likely to result. Heavy clay soils generally are unsuitable for the crop.

Place in Rotation

Because they are ill fitted to compete with spring weeds, carrots are most successfully grown after grass or rape. Rainfall and soil will influence time of ploughing, but this should be deep. In heavier rainfall districts winter ploughing is not advisable. The aim during spring cultivation is to conserve moisture, obtain a fine, firm seed-bed, and destroy germinating weeds in the top layer of

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the soil. It is not wise to sow before November in many districts, especially on light land, because if sown too early, the crop may run to seed should conditions prove unfavourable.

Sowing

Whether planted with the ridger, or on the flat with the drill, the seeding should be shallow and on a rolled surface. Intercultivation is facilitated by drilling at 21in. to 28in. on larger areas, but many unthinned crops are sown in 14in. rows with a light seeding.

A good practice is to mix the seed with about twice the quantity of damp sand a week before sowing and stir occasionally. Following this procedure the crop is given a better chance against germinating weeds in the seedbed owing to the rapid strike. Before the carrots appear germinating weeds may be successfully dealt with by a burner, scorching weeds in the rows. The seed and sand may be sown with the manure after thorough mixing, allowing 1 to 2lb. of seed to 2cwt. of reverted superphosphate per acre. Under good conditions much heavier manuring is payable, and when using a ridger much of the manure is placed below the seed.

After Cultivation

Horse hoeing should be commenced when the rows can be distinguished, taking due care not to cover the young plants. Thinning and weeding in the rows should be undertaken early, when the work is not difficult. The plants should be thinned out from 4in. to 6in. in the rows according to the variety and the crop likely to eventuate.

Weed Control by Spraying

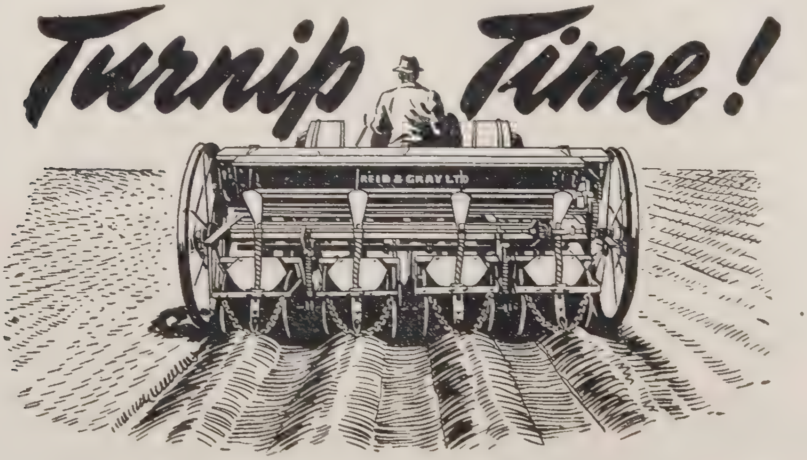
Much success has been obtained in Australia, and the results confirmed by tests in New Zealand, with spraying carrots with power kerosene for weed control. Spraying can be carried out at stages from seedling leaves up to the "two fern leaf" stage. After 24 to 48 hours most weed growth is completely killed, especially fathen, willow weed, cress, spurrey, and young docks, leaving the seedling carrots unharmed.

The most economical practice is to spray the carrot rows in an 8in. to 10in. band, leaving the row centres untouched until scuffling can be carried out to rid the area completely. The power kerosene is usually applied at 40 to 80 gallons per acre, depending on the amount of weed present. Unfortunately power kerosene is variable in its content of the chemical ingredients which bring about this weed control, and it is advisable therefore to test each drum of kerosene by spraying a short strip of the crop. If results appear satisfactory after 48 hours, the spraying can proceed over the whole area. Although this method of weed control may be particularly applicable to market garden areas, its use on field carrots may be well justified when weed invasion would render weeding and thinning operations very difficult and costly. It has been estimated that materials and labour for spraying cost normally about £3 10s. per acre.

Varieties

The variety sown will depend on the purpose for which the crop is grown and the soil conditions. The heaviest yielders, which require deep fertile soils, are the long varieties such as White Belgian. Intermediate and short varieties are grown on shallower soils. Guerande carrots are popular for sheep grazing, because, unless they are heavily sown, they do not require thinning. This is due to their short, stumpy shape and habit of growing well out of the ground, making them self spreading without intertwining. The carrot tops, unlike mangold leaves, are of high feeding value.

—*E. M. BATES, Instructor in Agriculture, Alexandra.*



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The R. & G. Disc Scuffler will not interfere with plants on high drills. High guide rollers and main axle give plenty of clearance. Discs, under spring pressure and lever controlled can be set at any angle, clearing right up to the root. Available in 2-row for horse, and 4-row, with automatic lift, for tractors.

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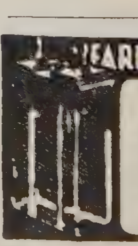

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Spraying, Cultivation, and Thinning

THE effective control of pests and diseases will be the chief concern of orchardists for the next two or three months. The general spraying programme for the season in last month's notes should be adhered to.

The stage of growth is very important in spray applications, and the necessity of applying the correct material at the right time cannot be too strongly emphasised. In some localities the blossoming period of most apple and pear varieties will be well advanced, and most of the trees will now be ready for the petal-fall sprays recommended in last month's notes. The petal-fall or calyx stage is a critical period, as black spot and powdery mildew almost invariably make an appearance at this time of the year. It is quite safe to spray when 75 per cent. of the petals have fallen, as the function of the blossom and the process of pollination will have been completed by this time. The fruit-set stage is also a critical time, and careful attention must be given if the best results are to be obtained.

The spraying of pears with Bordeaux mixture at a strength of 3-4-50 should be continued, particularly on varieties, such as Winter Nelis, susceptible to black spot.

The continued spraying of peaches and nectarines is necessary for the control of brown rot and leaf rust. Lime sulphur 1-200 plus colloidal sulphur 2lb. to 100 gallons should be applied at intervals of three to four weeks. These summer applications are frequently withheld and invariably defoliation occurs as a result of leaf rust. Where black aphis is present on Japanese plums, spraying with summer oil 1-100 is recommended as a control, concentrating on any dense colonies which may be observed.

Cultivation

The cultivation of the orchard should continue to receive attention. The soil should be worked down to a fine tilth and kept well stirred to a depth of from 3in. to 4in. to conserve soil moisture and to allow of the free access of air to the rooting system.

How frequently the orchard should be cultivated will depend largely upon weather conditions. The soil should be worked as soon as possible after heavy rains to prevent the formation of a heavy crust. Cultivation should be as close as possible to the trees and any remaining herbage should be removed by hoeing or digging. Poor cultivation or lack of cultivation is usually reflected in the condition of the trees and poor quality of the foliage.

Fruit Thinning

One of the most important factors in successful fruit growing is fruit thinning. With the present shortage of labour this work is frequently neglected, with the result that, under droughty conditions, a certain amount of fruit has to be rejected because it has not reached marketable size. The weight of fruit harvested from a well-thinned tree is frequently greater than from a tree which is allowed to mature the whole of its crop, as the remaining fruits attain a larger size and usually are of better quality. Where there is only a limited time for thinning and it is not possible to do the whole orchard, varieties such as Gravenstein, Cox's Orange, Dunns, Sturmer, and Dougherty should receive preference. By careful thinning diseased and blemished fruits may be removed, uniformity in size may be secured, and the resultant crop would be of much more value and less costly to handle.

The tree will benefit by thinning of the fruit, as the maturing of a well-thinned and distributed crop is less exhausting, which is reflected in the quality of the foliage and growth.

The extent to which thinning should be carried out must be gauged by the crop. It is more often inadequate than overdone.

Thinning should commence as soon as the natural dropping has taken place and when there is no further danger of late spring frosts. Some growers prefer to thin by hand, but the use of special thinning shears is recommended, as when thinning is done with the fingers the remaining fruit is often loosened, particularly with short-stemmed varieties, with the result that it soon falls.

—D. J. HOGG, Orchard Instructor, Mapua.

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Citrus Notes

Cultivation and Pest Control

THE setting of the citrus crop can be, and often is, adversely affected by cultivating too deeply, especially during November and December, when most citrus trees will be at the fruit-setting stage. Any cultivation during this period, either by hand or by machine, should be sufficiently shallow to avoid damage to the roots. With oranges, and to a smaller extent with other kinds of citrus, there are two distinct periods when the trees shed a percentage of the young fruits; the first is during the fortnight following petal-fall, and the second is usually about the third week in December, extending in some seasons to the end of December or early in January. Any injury to the roots during these periods is certain to cause an increased dropping of young fruits.

The conservation of soil moisture is probably of greater importance at this period of the year than at any other. The cultivation of the surface soil in itself has little beneficial effect in this direction, but it is extremely important that weed growth should not be permitted to compete with the trees for the available soil moisture during the critical fruit-setting period. The loss of moisture from the soil by evaporation is greatly increased when the surface is left uneven, as frequently occurs after discing or ploughing. In such cases it will greatly assist in soil moisture conservation to harrow or roll the surface soil as early as possible after the normal cultivation has been completed.

In pasture orchards the soil moisture is mainly lost by transpiration through the leaves of the pasture and the trees; this loss will be greatly reduced by frequent mowings, even when the pasture is only a few inches high. Pasture mown at this period of the year should be allowed to lie where it falls and not placed around the trees as a mulch, excepting perhaps in the case of very young trees.

Scale Insects

The presence of olive (or black) scale on citrus trees is generally indicated by the development of a conspicuous sooty-mould fungus on the foliage and fruit. Where the infestation is light a satisfactory control of this pest can be secured by adding 1 per cent. or 1½ per cent. of a certified brand of summer spraying oil to one or more of the Bordeaux sprays applied for the control of verrucosis. Hemispherical (or brown) scale can be similarly controlled. Should there be considerable infestation of these scale insects, a separate oil spray should be applied at a strength of 2 per cent. In orchards where red scale is also present the strength should be increased to 3 per cent., but if red scale only is troublesome, better control will be secured by making the application in February.

Harvesting

Oranges and grapefruit should be harvested as rapidly as the fruit reaches a suitable condition, and this should be continued at intervals of from 2 to 3 weeks. There is a definite danger of loss of juice from mature fruits allowed to remain on the trees too long, especially during November and December. Furthermore, the appreciable quantity of nutrient sap utilised by the tree in keeping the mature fruits in a fresh condition greatly reduces the ability of the tree to set the next season's crop, thereby accentuating the drop of young fruits in December.

Borer Control

The larva of the long-horn beetle (*Aemona hirta*) is one of the most destructive pests of mature citrus trees. The pest becomes progressively more difficult to control as the trees mature. The presence of borer is detected by the wood dust ejected from the tunnels in the larger limbs, also by wilting of the smaller branches. Very frequently the larvae enter the tree in the first place through a dead twig or wound; consequently the frequent removal of dead twigs and the coating of wounds caused by broken limbs or in the course of pruning with a heavy grade of petroleum jelly will prevent infection to a considerable extent. Infected branches up to about 1in. in diameter should be cut off and destroyed. In the larger limbs the wood dust should be first cleared from the holes as far as possible and a fine wire inserted to kill the borer. Benzine or carbon disulphide is then injected into the holes, after which the holes must be immediately plugged with petroleum jelly or other suitable material to prevent the fumes escaping. Excessive use of these liquids should be avoided, otherwise injury to the wood may be caused.

Pruning

Pruning should be completed as early as possible, especially where a heavy or severe pruning is being undertaken. If for any reason such pruning cannot be completed by about the end of October, it is advisable to modify it in the remainder of the orchard.

—P. EVERETT, *Orchard Instructor, Kaikohe.*

Bees and Orchard Sprays

WHILE most other species of pollinating insects are erratic in their visits, and usually make long flights from one type of flower to another, feeding only to satisfy their own appetites, the honey bee goes about her work in a systematic order, visiting the flowers of one kind of tree in rapid succession. This characteristic has tremendously popularised the use of bees in commercial orchards, as cross-pollination is essential in most fruits and desirable even with self-fertile varieties.

Though the service rendered to orchardists by bees is inestimable, complications arise with the necessity to control orchard pests, and orchardists who continue to spray with arsenate of lead when their trees are in full bloom threaten to poison the bee population in commercial orchard areas. Experimental work carried out by officers of the Department of Agriculture, in co-operation with leading orchardists, has shown conclusively that fully-efficient control of codling moth is obtained by the withholding of arsenate sprays until after petal fall.

Although the emergence of the codling moth coincides approximately with the latter part of the blossoming period, the early infection of moth is mainly through the calyx, which necessitates the application of an arsenate of lead spray before the calyx closes. The period of approximately 8 to 10 days between the falling of the petals and the closing of the calyx is long enough to enable a spray to be effectively applied against early infection by the moth. The grower can readily determine this period, and no benefit is obtained by applying sprays as a control of codling moth before the petal-fall stage, or when approximately 75 per cent. of the petals have fallen.

During full bloom bees have free access to the blossoms containing the flower parts essential for fertilisation. When those parts wither after having fulfilled their purpose and, with the falling of the petals and the end of nectar secretion, the attraction for bees ceases, spraying with arsenate of lead can be commenced in good time for effective control of codling moth, with the minimum of danger to bees.

Bees would be further safeguarded if all growth about the trees holding spray drops were turned in and plenty of fresh water made available in apiaries, so that bees would have no necessity to take up poisoned dew drops resting on vegetation under trees to get the water needed for brood-rearing.

◆

"The Citrus-growing Industry: How to Establish an Orchard," Bulletin 206, is available **free** from offices of the Department of Agriculture.

◆

HOME GARDEN NOTES

Work for November

NOW that the home gardener is busy with the season's vegetable production, the general tendency is to grow more of one variety than is necessary to meet household requirements. To do this means waste of seeds, time, labour, manure, and fertiliser, and space in the garden, which, when not occupied by an edible crop, could be growing a useful soil-improving green manure crop for digging in.

It is not possible to take more out of the soil than is put into it; hence the plentiful supply or scarcity of plant food in the soil must be reflected in the quality of the produce grown.

If a few handfuls of oats are broadcast over a piece of newly-dug ground, flattened with the back of a spade, and then just turned over to a depth of 2in., birds will be prevented from getting the seed, and a good quantity of material to turn under will generally be yielded. A grade Garton oats may be dug in at any period of growth.

LATE AUTUMN AND WINTER VEGETABLES.

During November initial steps should be taken to ensure vegetable supplies for late autumn and winter.

Cauliflower

To secure mature heads of cauliflower before the advent of wintry weather seed should be sown as early as convenient. When the seedlings are 2in. high it is advisable to prick them out, allowing 1½ to 2in. each way between the plants. On being removed the young plants should be handled carefully and as much soil as possible taken with them in order to prevent the plants from obtaining a setback after transplanting. Plenty of water is essential, but drainage should be good. Varieties recommended are Phenomenal Early, and Phenomenal Medium.

Broccoli

Recommendations made above for cauliflower are suitable for broccoli, except that whereas cauliflower, which are not bred to stand severely cold weather conditions, will be rendered unfit for human consumption by frost, broccoli will stand throughout winter without injury. Seed of different varieties may be obtained which, sown at the same time, will mature in succeeding months from May to October.

Brussels Sprouts is another desirable late autumn and winter vegetable, seed for which may be sown during November.

Leeks

For best results sowing of leek seed should not be delayed beyond mid-November. London Flag and Musselburgh are recommended.

Parsnips

To allow time for the full development of parsnip roots, which will keep well either in the soil or in storage, seed should be sown during November in most parts of the Dominion. Hollow Crown is the variety recommended. It should be sown in the same way as carrot seed, but much more thickly. As the thin, flat seeds soon lose their vitality, only fresh seed not more than one year old should be used.

Swedes

In the colder parts of the Dominion seed of swede turnip may be sown in mid-October, but November is generally the month when most of the garden swedes are sown. Varieties recommended are Laing's Garden and Superlative.

Carrots

Where it is practicable, and in areas affected with the carrot rust-fly, it is not advisable to sow main-crop carrot seed till mid-January, or later, which will assist in saving the crop from the depredations of this soil pest.

Sweet Corn

In districts favourable for the production of sweet corn seed can be sown with safety in November. It is a very tender plant and highly susceptible to injury by frost. Where well-rotted stable or farmyard manure can be dug in superphosphate, 3oz. to each hill, is all the fertiliser which may be required. In the absence of stable manure, blood and bone at the above rate, combined with a light dressing of potash, should suffice. Six to eight seeds planted on hills, 30 to 36in. apart, and the resultant plants thinned to four—the most vigorous—is the usual garden method of production.

Beans (Climbing)

In households where beans are desired over a lengthy period a climbing variety should be grown. Three or four long stakes can be placed to form a triangle or a square, and the plants trained to grow up and around these. The stakes should be not less than 3ft. apart at the base and securely fastened at the top. As many seeds as considered necessary may be set round the bottom of each stake. After germination the plants may be thinned to 3 or 4, which can then be trained to the stakes. It is sometimes advisable to give the young tendrils a start by the use of a temporary fastening. These plants can also be trained up wire-netting or on a wire fence. Broad Windsor and Early Long Pod are suitable varieties.

Cabbage (Summer)

Summer cabbage is a very useful crop in the garden, and, because it is developing through a good growing period of the season, should not be neglected. It does not require a great deal of attention, but weed control should be rigorous. If dry weather is experienced, give the plants a thorough soaking. This is the proper method of watering, and is preferable to frequent superficial applications.

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Pumpkins, Squash, etc.

The above recommendations about watering are very applicable to all members of the gourd family, including cucumbers. If seeds of the varieties mentioned have not yet been sown, those specially recommended are: Pumpkins—Triamble and Queensland Blue; Squash—Golden Hubbard. The growing plants should be kept clear of weeds until the vines begin to spread, when no more hoeing will be required.

Tomatoes

While the soil in which tomato plants are growing should not be permitted to become too dry, caution should be exercised with the use of water. Over-watering, particularly during periods of dull weather and high humidity, will have a tendency to produce tender growth, which will be highly susceptible to disease attacks. Regular hoeing round the plants will do much to assist in conserving soil moisture and thus avoid the necessity for heavy applications of water. When a variety is being grown which will be trained up and fastened to stakes these should have been placed in position before setting the plants. If this has not been done, the stakes should be driven into the soil as near the plant as practicable without delay. Driving stakes close to the plant after it has grown sufficiently to be ready for tying cannot be recommended.

Peas

During November the two most important matters in pea culture which should be attended to are watering and keeping the top growth upright. Permitting water to saturate the soil between the rows is the best way of satisfying the requirements of a pea crop. Adequate drainage is, however, necessary if this practice is adopted. When growth seems to be lagging an application of blood and bone manure, 2oz. per yard of row, is a safe method of inducing growth. Great as may be the temptation, it is inadvisable to use any special nitrogenous fertiliser for pea production.

Celery

November will be late enough to sow celery seed, if maturity is expected before very cold weather begins. Solid White, White Pascal, and Winter Queen (a green variety) will keep well during winter months, but must be well grown.

Good celery plants should now be available from pricked-out seedlings, and these should be set out as soon as convenient. Trenches in which celery is to be grown should not be less than 12in. deep. A good dressing of well-rotted stable manure should be dug into the bottom and covered with 3in. of soil, into which the plants can be set and watered immediately after. A spacing distance of 8 to 9in. between the plants will be sufficient.

Celery can be successfully grown in a bed without resorting to a trench. A mixture of 4 parts blood and bone manure with 2 parts superphosphate and 1 part potash, ¼lb. per sq. yd., should be broadcast over the bed after digging and well worked into the soil before planting. Plants grown in this way may be spaced 12in. apart. The bed can be of two or more rows, between which there should be the same spacing as between the plants.

Lettuce

A small sowing of lettuce seed may still be made to obtain seedlings for transplanting. After re-setting the plants should be kept well watered, because dry weather conditions are sometimes experienced during November.

Endive

Endive is an excellent substitute for lettuce, and may be grown in the same way. To bring out the full flavour of endive as a salad vegetable it should be blanched by loosely tying the leaves at the top when full grown.

Radish

When growing celery by the trench method, the soil which is used to build up the sides can be sown with radish seed, which is forceful in germination, and the roots so quick in growth that the crop will be cleared before the celery is fully grown. Seed, however, should not be sown so near the edge of the trench that the growing celery plants will be shaded by the radish foliage.

Onions

Onion plants set out in August should now be making satisfactory growth. Weeds permitted to grow among the bulbs will have a serious retarding effect on bulb development. Hoeing between the rows should be carefully carried out because of the danger of damaging the bulbs, thus rendering them unfit for storage. While the use of liquid manure made from organic substance may be permissible, no inorganic nitrogenous fertiliser should be used. Applications of water should be made regularly during dry weather so that bulb growth may proceed uninterrupted.

DON'T neglect making provision for autumn and winter supplies of vegetables. Success in this is the hallmark of the capable gardener.

Potatoes

During periods of humid weather late blight is likely to develop among potatoes, especially where the haulm is well grown. To prevent this it is necessary to have all the top growth well sprayed with Bordeaux mixture. Spraying properly is not a question of merely putting the liquid on the leaves. Surface covering only is just so much time, money, and labour wasted, as the under-side of the leaves is usually the first to be attacked by the fungus which starts blight. In order to make spraying easier, the plants should first be banked with soil hoed from between the rows, which will permit of better use of the spraying outfit. If a full crop of tubers is to be harvested, protection by spraying the whole plant above soil level is necessary, and it cannot be too strongly emphasised that spraying with Bordeaux mixture is **a preventive,** not a remedy.

Kumaras

The principal attention kumara plants will require during November is hoeing to keep down weed growth. Each time this operation is carried out it is advisable to draw some soil towards the top of the ridge on which the slips have been set. When the vines begin to creep in the rows the foliage smothers weeds, which cease to become troublesome.

—*D. K. PRITCHARD, Instructor in Vegetable Culture, Wellington.*

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Control of Brood Rearing

DURING the next two months beekeepers should give each colony detailed examinations and make any adjustments necessary for the promotion of maximum field bee population at the commencement of the main honey flow.

As a worker bee has to perform duties within the hive for the first two or three weeks of its life, colonies should be adjusted so that a strong force will emerge from the brood cells about three weeks in advance of the honey flow. To accomplish this, a correct understanding of the principles influencing brood rearing is essential, as any lack of knowledge or mismanagement may ultimately cause a reduction in the honey crop.

The important factors which assist in the control of brood rearing are summarised as follows:—

1. Young and prolific queens.
2. Sufficient bees wintered over to meet early brood-rearing requirements.
3. Good worker combs in the brood chamber.
4. Ample stores of honey and pollen.

Poor Queens

Hives which contain queens in their third year or which for any other reason are undesirable should be marked for early requeening, as these queens are usually unable to maintain intensive egg-laying and invariably fail or induce swarming when brood rearing should be at its height. A maximum of egg-laying should be reached six weeks before the main honey flow.

When drone-laying queens or laying workers exist in a colony the worker bees are usually old and few in number and are not worth requeening or otherwise saving except by uniting to a "queen-right" hive. Before uniting, the drone-laying queen must be killed and all the drone brood replaced with new combs, otherwise this drone brood may cause the good queen to be superseded.

A drone-laying queen is one that has been unable to take her mating flight or has been incompletely fertilised. There are various reasons for this condition, but the main causes are generally attributable to unfavourable weather preventing the mating flight or to the novice beekeeper clipping the queen's wings while she was still a virgin. The presence of a drone-laying queen is recognised by the fact that she lays her eggs irregularly in the worker cells, from which only stunted drones are raised, but in most instances the bees neglect such brood and allow it to die. The cappings of such brood cells are easily identified, as they are abnormally bulged and present a dome or bullet-shaped appearance.

The brood of a "laying" worker is very similar to that of a drone-laying queen, the main difference being that the eggs are laid in a more erratic manner with up to a dozen or more eggs in each cell. As in the case of drone-laying queens, any eggs that may hatch will produce only male bees. Colonies in this condition should be dealt with similarly to those containing drone-laying queens. In this case, it is practically impossible to detect the "laying" worker, and as the bees will kill her as soon as they realise that the colony is "queen-right," there is no necessity to locate her before uniting.

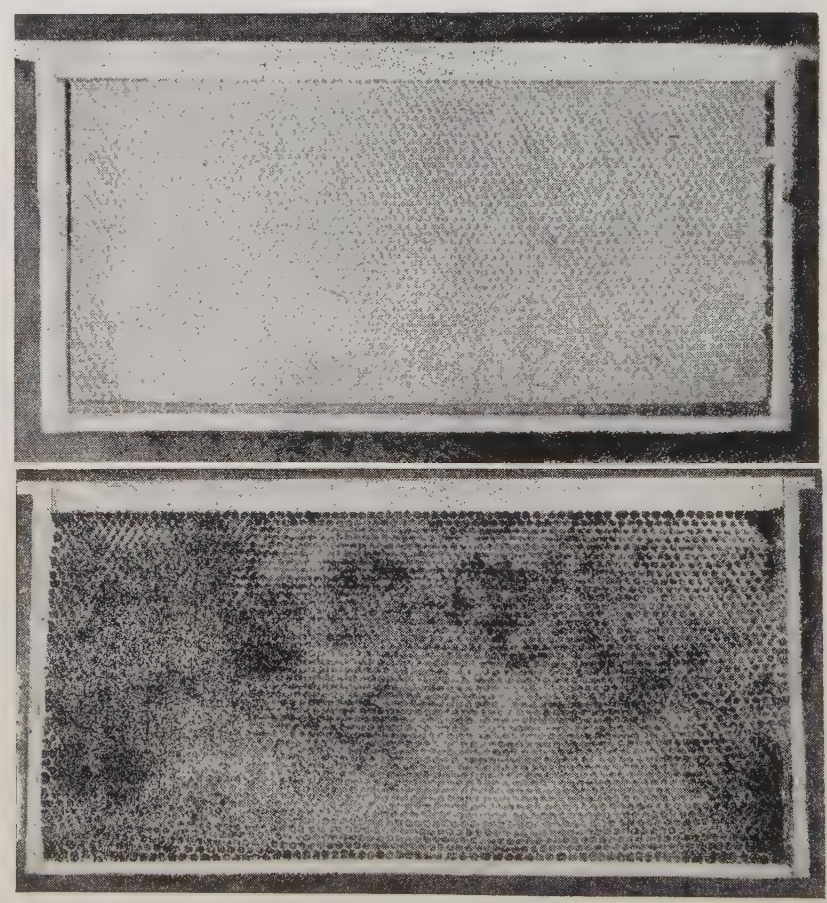
Ample Stores

A careful assessment of the honey and pollen stored in each hive is necessary to ensure that the bees will not starve and that brood-rearing is not checked. During October the weather is usually broken, and there is seldom sufficient nectar being gathered to supply the total requirements of the increasing numbers of young bees and brood.

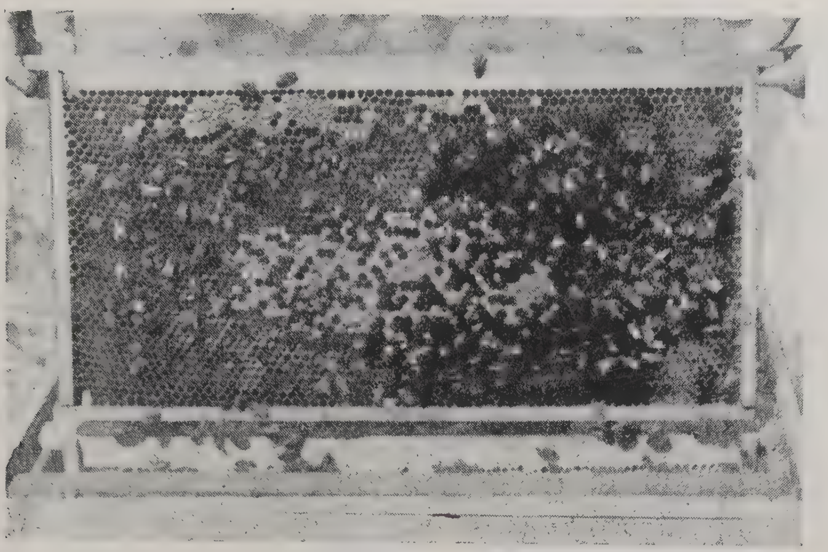
Stores consumption is heavy at this time of the year, and if nectar is not being gathered in sufficient quantities any colony found with less than 10lb. or 15lb. of honey (the equivalent of two or three full combs) should be given supplementary combs from hives with a surplus. Where honey is not available the colony should be given a feed of sugar syrup.

Brood Accommodation

Combs containing a large proportion of drone cells and combs



Upper—A full sheet of comb foundation partly drawn out by the bees. Lower—A completed worker comb built on comb foundation suitable for use in the brood chamber.



A patch of stunted drone brood raised in a worker comb, the work of a drone-laying queen.

which may be damaged in any way should be removed from the brood nest and replaced with combs containing all worker cells. This should be done before the bees have a chance to utilise them for brood rearing or for the storage of early nectar. Queens are reluctant to make use of such combs, and will usually confine their activities to the one side of them, thus creating crowded brood nest conditions despite the availability of ample space beyond. Further, large numbers of useless drones will be reared, thus restricting the free expansion of the brood nest for the profitable worker brood. A few spare supers of good worker combs should be on hand when examining the hives to replace the culled combs.

Colonies with vigorous, autumn-reared queens will have from six to eight well-filled frames of young brood, and from now on the strength of such colonies will rapidly increase. If the hives are single storey, additional room should be given to prevent overcrowding by adding a super of drawn combs. Where drawn combs are not available, a super of frames fitted with full sheets of foundation comb should be given as an alternative.

Beekeepers intending to make an early increase in the number of hives should not be tempted to force early brood-rearing by the practice known as "spreading" brood combs. This method not only disturbs the normal working of the bees, but also divides the brood-nest. If cold weather sets in, the bees may not be able to cluster effectively on the divided brood, and serious loss of brood through chilling will result. Alternatively, when a queen has ample room on the outsides of the normal cluster and the hive has a surplus of honey correctly stored, a compact brood nest will be maintained. Moreover, any extension of rearing will be regulated by the number of bees available to cover the brood.

Swarm Prevention

When colonies become very strong prior to the beginning of the main honey flow there is a danger of swarming. It is therefore essential that an effort should be made to overcome or reduce the swarming incidence.

Swarming is the result of the bees' natural instinct to propagate the race, but to allow colonies to swarm is contrary to successful apiary practice. The prevention of the swarming impulse and the subsequent control of swarming are the greatest problems with which beekeepers have to contend. In many instances, however, swarming is the result of incorrect hive management or lack of attention to certain fundamental necessities.

When the factors that induce bees to make swarming preparations are understood and certain remedies are applied the number of hives that actually swarm will be greatly reduced. Colonies headed by old queens are more likely to swarm than those having young queens. Want of room and ventilation on hot days will induce swarming, and extra supers should be provided slightly ahead of requirements. An excessive number of drones is also a cause, and this can be prevented by culling all drone combs and replacing with combs built with worker cells.

Where a colony has prepared for swarming, the issue of the swarm can be retarded for a time by destroying all the queen cells and by placing an additional super immediately above the brood chamber. A further examination of the brood nest should again be made in about eight days' time to ascertain if another batch of cells has been raised, and if so, more drastic measures must be applied. The queen cells should again be destroyed, but on this occasion several combs of brood should be removed from the hive and replaced with empty drawn combs or frames with full sheets of foundation. This creates a situation somewhat similar to that of a newly-hived swarm, and the bees generally accept it. The brood removed from the hive may be distributed among the weaker colonies that are able to care for it in order to assist them to build up more rapidly.

—E. SMELLIE, Apiary Instructor, Christchurch.

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POULTRY KEEPING

Late Hatching Detrimental and Uneconomical

THE New Zealand Poultry Flock Improvement Plan came into operation on January 15 this year because of the obvious need for an improvement in the size and quality of stock throughout the country, and it is only since the scheme commenced that the extent of the deterioration in the flocks in New Zealand, particularly in size, has been revealed.

Late Hatching Common

One of the biggest single factors affecting the deterioration in size and quality of our flocks is the common practice of poultry breeders and poultry farmers generally of hatching well beyond the period when all breeding and hatching should have ceased, a practice which unfortunately cannot be controlled except through the common sense of the poultryman himself.

In the majority of cases it is monetary enticement which prevents the seller from refusing orders and, as a result, brings evil in its train; late hatching is usually done either with a view to selling stock or to replacing stock which has been oversold earlier in the season. Unfortunately this affects not only the breeder himself, but also any other person who requires pullets and takes late-hatched birds because no others are available.

In these circumstances the buyer would be better off if he refrained from purchasing any stock at all rather than take late stock. The consequence of selling late-hatched stock is that birds of poor vitality and stamina are being distributed, thus paving the way for further outbreaks of disease, since late-hatched stock contract disease much easier than early-hatched birds.

Those whose flocks have been passed for accreditation under the New Zealand Poultry Flock Improvement Plan should be careful to sell only a class of stock which they know should give results, and this class does not include late-hatched stock. On too many poultry farms there are unthrifty pullets and cockerels which reflect disadvantageously on the managers' ability and common sense. These weedy birds are not always the result of late hatching, but birds of this type should have no place on the farm.

Weaker Chicks

Late-hatched chicks may generally be regarded as dangerous and uneconomical. Some late-hatched pullets may be as good as early ones, but these exceptions are few and far between. Generally chicks hatched during the early part of the season have by far the best opportunity of growing into good, big, strong, and healthy chicks, whereas those hatched at the tail-end of the season are at a disadvantage in nearly every way.

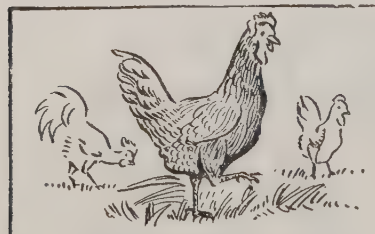
The poor results generally experienced with late hatching in both incubation and particularly rearing are not experienced at the beginning of the season, because the breeders are in good condition, have not been laying long, and naturally have not had any big strain or drain on their vitality and stamina; whereas at the end of the season, say October and November, they have been laying for some months and are therefore not in as good condition for breeding as they were earlier.

Disease Encouraged

The rate of development and ultimate size are very much greater with early-hatched stock than with late-hatched, and the birds are fitter and stronger to withstand disease. The number of unthrifty chicks among late stock is considerably greater, and these birds are a continual source of danger to the strong, healthy chicks. Whenever disease does break out it can usually be traced to these poor, weedy chicks. If correct measures are taken in the early stages of an outbreak of disease, it may be fairly well controlled; but among unthrifty birds any satisfactory control is much harder to effect. In some cases it is very difficult to keep disease at bay, particularly on farms which have experienced an outbreak previously, although in that case the poultryman himself would be in a better position to check any second outbreak through his previous experience.

The number of outbreaks of disease and the number of diseases have increased considerably in the last few years, a position for which the practice of hatching late in the season, even up to Christmas time in many cases, may be considered a big factor. Pullorum disease has received considerable publicity in connection with the New Zealand Poultry Flock Improvement Plan, but does the average poultry farmer realise the risk of excessive losses from this disease among late-hatched stock? This may be due to poorer-quality chicks, or to lack of attention by the poultry farmer with less time to spare.

With warmer weather towards the end of the season, watch must be kept for the appearance of "green leg," which very seldom appears earlier than October or perhaps late September. In every case the trouble is due to the chicks "sweating," a condition which is almost impossible in



A little brown hen, known as Kitty,
Remarked, "To waste eggs is a pity;
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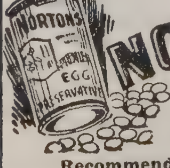

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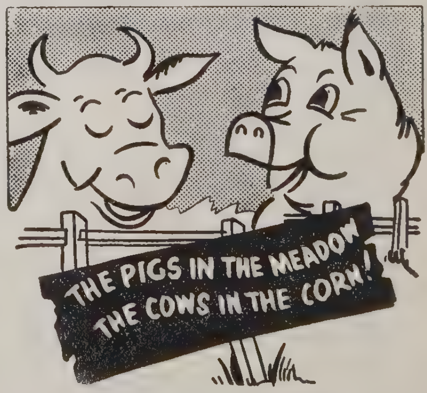
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the cooler weather of the earlier part of the season.

The fertility and hatchability of eggs are poorer and the mortality in rearing is always greater in late hatching, because the hens have been laying for some months and the contents of the eggs used for incubation have not the same value as those used earlier in the season.

Early chicks also have a distinct advantage because grass runs have had, or should have had, a good rest and are fresh. There are too, not so many chicks to look after as there are later in the season, which allows the poultry farmer to spend more time with them. At the tail-end of the season the runs are no longer fresh and perhaps bare of grass, the poultryman has less time to spend with the chicks, and the weather is all the time becoming warmer. With increased temperatures, more attention is required to prevent such things as feather pulling, toe and vent picking, and "green leg."

More Culls

One very important factor which proves that late-hatched stock is definitely uneconomical is the increased number of culls to be found when the stock reaches the laying stage; in fact it will be found that there are a larger number of culls throughout the growing stage as well as at maturity than is the case with early stock.

Late-hatched stock do not mature at the correct age. Early stock often mature very early; White Leghorns as early as four and a half months. However, with late stock this never happens, because in all cases the birds go well over the correct age—the period varies according to the care and attention paid to the stock during the growing stage. Stock hatched during the latter half of October frequently take as long as eight months to come to maturity. Stock hatched later still, in November, sometimes take as long as nine months, and some are at least ten months old before laying.

Pullet Moulting

It is often argued that the early-hatched pullet always moults before the winter, but can it be definitely stated that later stock will not moult also? October hatched pullets have been known to moult, and in any case it is a moot point whether this early moult is at all detrimental. Early pullets generally lay for two or three months beforehand and are in a moult for six weeks or so, or at most, two months. Having returned to the lay, they carry on until February or March in the following year, and one big advantage is that they lay large eggs immediately they return to production following the moult.

There can be no question that the early-hatched cockerel is the only one suitable for the following breeding season.

—W. L. JOURDAIN, Poultry Instructor, Dunedin.

Cannibalism in Chicks

CANNIBALISM in chicks in the brooder stage is a source of endless anxiety and annoyance to many poultry keepers. The usual tendency in development of this trouble is toward the hottest part of the day and in the form of toe picking and feather pulling. Blood is drawn and in a very short time numbers of chicks become affected. In severe cases the victims are completely disembowelled, and at this stage the position can, and often does, assume serious proportions.

The cause is not always easy to locate, although in the main it can be attributed to over-crowding, lack of feeding space, insufficient inducement for exercise, diet deficiencies, and, last but not least, too high a temperature in the brooder house. The last-named is the cause of most outbreaks of cannibalism and may be easily corrected by opening up the room sufficiently to create a moving current of fresh air throughout. The maintenance of cool conditions in the brooder house is very important. When the chicks require warmth they return to the brooder. Rear ventilation sufficient to carry off all poisons thrown off by the chicks must be provided.

The most effective method of checking an outbreak of cannibalism is to allow the chicks freedom in fresh, clean runs. This seldom fails to accomplish the desired result, as the chicks are kept occupied with fresh interests. At the same time, the cause of the trouble must be located and corrected, or it is possible that further outbreaks will develop.

In severe cases of feather pulling the injured parts may be painted with Stockholm tar or a mixture of vaseline and black nugget. The affected chicks then offer no further inducement for attack, and, provided the picking has not been too severe, the birds will usually recover.

Open-fronted, roomy, and well-ventilated houses, along with a well-balanced diet including ample greens, and some inducement for exercise, offer very little cause for losses from cannibalism.

—C. R. JEFFRIES, Poultry Instructor, Auckland.

At a Chick Sexing Examination held at the Government Poultry Station, Wallaceville, on Monday, September 3, the only candidate presenting himself, Mr. R. H. Winter, Tikotino, c/o P.O., Waipawa, Hawke's Bay, sexed 200 chicks in 36 minutes with an accuracy of 97½ per cent. and has accordingly been granted a chick sexer's certificate.

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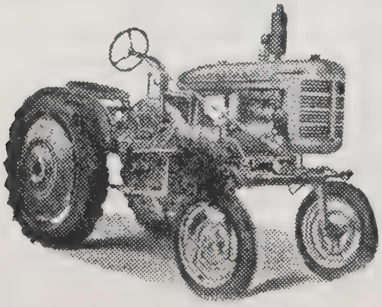

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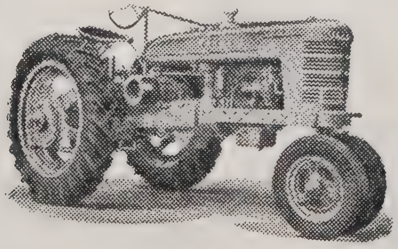

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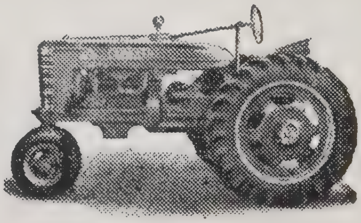

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YOUNG FARMERS' CLUBS

Saving Aircrews' Lives

What would you do if an aircraft crashed on your farm? Could you, with a reasonable degree of skill and confidence, go about extricating the pilot, if he was injured?

IT was with a view to learning the answer to these questions that the Bulls Young Farmers' Club recently visited R.N.Z.A.F. Station, Ohakea. The advice received so impressed members that it was suggested that some of the hints be published for the benefit of all Young Farmers' Clubs in New Zealand.

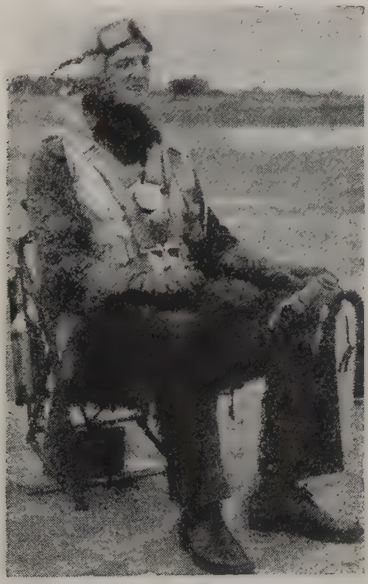
It is difficult to lay down fixed rules for the rescuing of crashed pilots, because there are many types of aircraft and many types of crashes. Obviously, the would-be rescuer's first task is to extricate those in the crashed machine.

All the canopy tops on aircraft used in New Zealand slide backwards. This can be taken as a general rule. To release the canopy there is always an external button or lever which is clearly labelled. However, a crash might make the catch unserviceable. If the canopy will not slide backwards, the rescuer must break his way into the aircraft.

It is a waste of time trying to break the windscreen on the front of a modern operational aircraft. The windscreen is made of bullet-proof glass and will withstand a lot of punishment. The perspex side of the canopy is more vulnerable and can be kicked through, but the rescuer must take care not to injure the person inside. When the perspex is broken it has jagged edges, and to give a safe clearance a large opening has to be made.

Releasing the Pilot

The pilot of a fighter or training aircraft will be strapped into his seat by a harness, which can all be undone by one pin or lever, but the very simplicity of the contraptions tends to make them appear complicated. One type of harness commonly used in New Zealand aircraft—Corsairs are an example—has a short metal lever which, if pulled over, will release all the straps. Another type is called the Sutton safety harness. It is to be found in aircraft of the Tiger Moth type. The harness can be released merely by pulling out a triangular wire clip, which holds a pin securing the straps together.



Airman with parachute and harness fitted.

[R.N.Z.A.F. photo.

Even after a pilot has been released from his seat his parachute pack might make it impossible to remove him from the aircraft. Again, the rescuer might be confused by the apparent complicated nature of the straps. But parachutes, like seat harness, are made so that the wearer can get clear of them quickly. The large round metal disc which appears on the chest of the wearer in the illustration has to be turned clockwise and then pressed in. These directions appear on the disc itself.

If the occupants of an aircraft have been injured, they should be taken at least 40 yards from the scene of the crash and covered with coats to keep them warm. The petrol tanks or oxygen cylinders might explode. If the aircraft is not already on fire, the danger is still present. No naked flame should be taken anywhere near the scene of the accident. This definitely applies to the striking of matches. Water should not be put on a petrol fire. Fire extinguishers are standard equipment in aircraft.

Harmless Bullets

Contrary to general belief, the explosion of live ammunition in a burning aircraft is not very dangerous. Bullets blown from the cartridge cases have very little velocity or powers of penetration. Often the cases explode with the bullets still attached. However, it is important not to get in front of the aircraft in case some of the guns are loaded. Bullets from the guns do have velocity and powers of penetration.

Compared with the number of aircraft in the air, the R.N.Z.A.F. has very few crashes and accidents. The low proportion can stand favourable comparison with any other air force in the world. But an occasional accident does happen, and there is always the chance that a member of the general public might have the opportunity of rescuing the pilot. And—because a pilot in trouble will automatically make for open country—the chances are more than even that the rescuer may be a farmer. One farmer, at least, has performed such a rescue. He is Mr. M. L. Eolden, who received the George Medal for rescuing a pilot from a burning aircraft which crashed on his property.

Remember—go for the pilot first (and, of course, passengers, if any). If the canopy will not open, attack the side panels of perspex. Look for the release clips where the straps of the harnesses come together. Then get the pilot away from the aircraft. In other words, your actions will simply be dictated by common sense, which has often been a deciding factor in saving lives.

Maori Y.F.C. Visits Waikato

A TRIP to the Waikato to visit the Ruakura Farm and to study farming methods in the district, where intensive dairying is carried on, was recently arranged for members of the Whirinaki Young Maori Farmers' Club.

At Frankton the party was met by Mr. Findlay, of the Native Department, Hamilton, who had arranged accommodation at the Maori Hostel at Frankton.

On the way to Karapiro, via Cambridge, inspections were made of some crops of chou moellier with turnips, being fed off as a supplementary feed for winter use, many types of shelter trees, and the hydro-electric works at Karapiro.

Ruakura Experiment

At the Ruakura Farm the officer in charge fully explained an experiment in farming two identical areas of land with exactly similar types of stock in two ways—A, correct and proper methods of farm management; B, bad farming methods. The actual results of animal husbandry and pasture management shown had to be seen to be realised. The results in figures of actual returns have yet to be seen, but it is evident that there will be no doubt of the result.

In A the area was well-subdivided and the pastures harrowed regularly; in B the place was in five large paddocks, and harrowed say once a year, just as the badly-managed farm is. The result was astonishing. A had abundance of young green feed of even quality and evenly palatable. On B the growth was uneven, bare in some places, and rank in others, showing very clearly that where the droppings are not harrowed the growth is rank and unpalatable, thus restricting the feeding value and content of that area.

The feeding methods and the results were outstanding. The stock on each area are divided into three groups—weaner heifers; 18-month heifers coming to profit; and cows. The weaners, 40 in each group, were all the result of artificial insemination, a process which was explained to the party. The A calves are fed on new milk, each in a separate tin in a stall; this individual feeding is done until the calf is weaned off milk altogether, when the calves are put into the paddocks ahead of the cows, which enables them to get the pick of the feed and maintain their growth without interfering with the feed for the cows which follow in two or three days' time. The calf, therefore, coming off a part diet of milk does not suffer a check, and its growth and constitution are not in any way impaired. The calves on B section get the treatment meted out to calves on most farms: Fed from troughs or tins until ready to wean, and then put out of the way somewhere on the farm to fend for themselves. The result is remarkable. The A calves are strong, healthy, with good constitution, while the B calves are weak, with poor constitution, and it is obvious which are going to make the best cows. The 18-month heifers, too, showed remarkable evidence of the difference in method. The A heifers were in a 4-acre paddock of feed up to their knees and were fenced off by an electric fence into a half-acre area in which they remained one day, being moved into the next half-acre strip next day, where they were fed hay and silage. They were let out into a run off area at night. In this way they made use of all the available growth in that area and did not run over and foul the whole area. When this 4-acre area is finished they are moved into a further area which is treated in the same way, and the one just used is harrowed, and is again ready in a short time. These heifers are a well-grown, good-constitutioned lot, and will certainly have a high rate of production. The B heifers, on the other hand, had the treatment found on most farms in that they had no rotational grazing, but were fed on hay and silage. They were not in good condition and would take a long time to reach high production after calving. The A and B mature cows were given the same treatment

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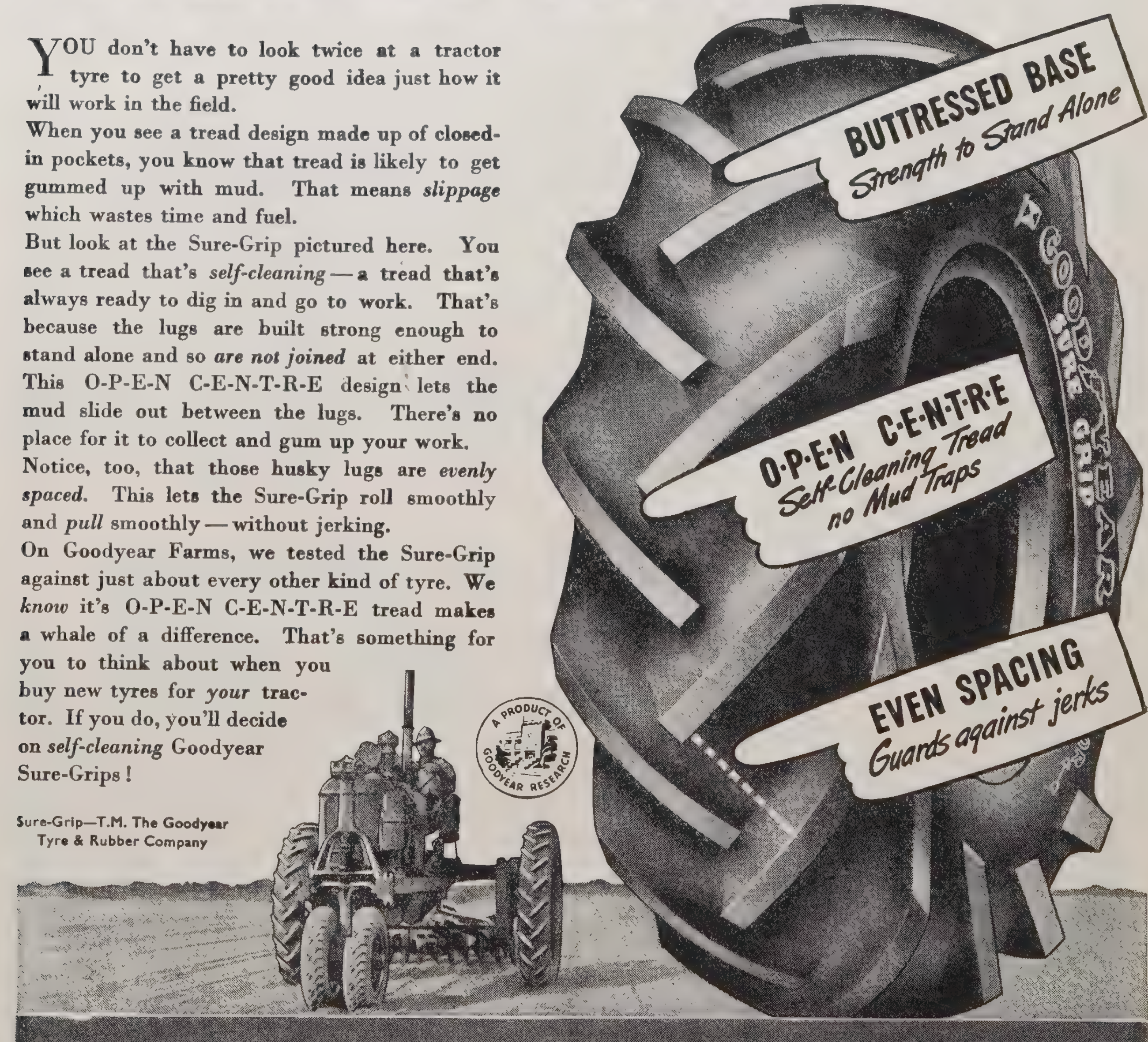
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as the heifers, and the results in each case were the same.

Practical Lessons

Seing these actual practical results did more to impress members with the benefits of good methods than all the talking in the world, and the visit will have beneficial results.

The making of silage and its feeding value were fully demonstrated and explained, and it is intended to make silage in Whirinaki this year. The methods of artificial insemination were fully explained and demonstrated. The Pukemoremore Scheme was inspected, and the method of dealing with gorse, manuka, and scrub was pointed out by Mr. Findlay. The area of good workable land available was very impressive, compared with the districts in the north, and it would appear that, given economic areas in that district, the units could not help doing well.

At Ngaruawahia the party was shown the house and cowshed covered with bags, a method which looks impressive but too simple to be permanent. If the fabric of the bags last under this treatment, it would simplify the construction of some farm outbuildings.

As a result of the trip preparation for winter feeding will receive a great deal of attention in the Whirinaki area, and the general attention to stock will be improved.

—G. WYNYARD, Hon. Sec.,
Whirinaki Y.F.C.

Field Days

Hunterville Club

DESPITE the wet weather, the Hunterville Y.F.C. held a most successful field day recently on the property of Mr. A. H. Rhodes, "Matainui," Rata. Sixty young and older farmers from the surrounding districts attended.

In a demonstration on mole draining by Mr. Rhodes in wet ground the drains were soon carrying a full bore of water to the creek. Mr. Rhodes showed how to draw to plan by mathematical instruments the layout of each tile drain on the farm, and explained the advantage of sowing down with pedigree strains of grasses.

After lunch Mr. W. F. K. England spoke on how to bring up and train a sheep dog. Mr. J. Goodwin then demonstrated with his dogs, while Mr. England commented on their performances.

The breaking in of a young horse was demonstrated by Mr. Goodwin, who showed how the ropes were secured for the throwing process, and also indicated good and bad points of a horse and the method of ascertaining its age.

The most popular demonstration of the day was the making of concrete posts, by Mr. Rhodes, who made four posts and gave all the details of the making of a first-grade post.

An inspection of the piggeries, which were a credit to the owner, also proved very interesting, as they had every modern convenience necessary.

J. Bartlett thanked all who had given lectures and demonstrations and Mr. Rhodes for the use of his farm for the field day. He also thanked Mrs. and Miss Rhodes for providing lunch and afternoon tea.

Mr. Rhodes said he was pleased to help the club, and that at any time a young farmer wanted help he would be pleased to give it.

—G. W. BARTLETT, Chairman,
Hunterville Y.F.C.

Amuri Club

A FIELD day was held recently on the property of Mr. L. J. Iverach, Waiau, by the Amuri Young Farmers' Club. Members proceeded to the site of the proposed limeworks, where Mr. Ferguson addressed the party. He said the capital required was £20,000. The rock contains over 90 per cent. carbonate of lime. The limeworks will be situated 1¼ miles from the Waiau railway station, and 150ft. above the station. The limestone will be conveyed to the station, where the crusher is to be, by an aerial bucket system. Experts estimate there is about 3 million tons of limestone on the surface alone.

Mr. Iverach later conducted the party round his property, paying particular attention to the results of liming. Members could still see where the topdresser had missed although it had been 4 years since sowing. The grass and clover plants on the limed portion had stooled out, while on the pasture not limed the drill marks could still be seen. The woolshed was next inspected, and a judging competition held, which was won by N. McIntosh. After the judging Mr. Iverach gave a very interesting talk on the main points of sheep.

A short meeting was held after tea. The club chairman, W. P. Belton, thanked Mr. and Mrs. Iverach for their hospitality.

—G. H. ANDERSON, Hon. Sec.,
Amuri Y.F.C.

Mosgiel Club

A VISIT was paid by the club recently to Mr. A. Murray's property on the Taieri. Mr. Murray is a well-known breeder of stud Romneys, and in a talk on their breeding and keeping he said that the Romney type was the most numerous in the country today. Though they were a hardy type of sheep, that did not mean they could survive or make a payable return on high, cold country; they were raised and bred on the plains or low hills. Most of the sheep were bred from the old English Romneys, but New Zealand types show many advantages over their ancestors.

Members were shown the finer points connected with perfect conformation. The amount of wool on the face had been increased by many experiments in breeding for thicker wool, till at the present time some of the highly-bred sheep show more than is required, and the Romney breeders are now endeavouring to reduce this excessive amount. This, he said, was just one example of the many mistakes made when attempting to improve the breed.

He illustrated, on a ram, the various points such as square backs and bellies, with the wool on the bellies low down. A very full description was given of all points from the nose, along the back, and by the belly back to the head. Using this ram he also illustrated the quality of the wool, showing how the wool should open cleanly and be of an even grade all over, with no patches of coarse fibre on the breech and belly.

Showing four more rams, he illustrated many differences in wool texture and crimp, and also pointed out in some of them their really good points. The first ram to be exhibited was worth about £180, while the others were also fairly valuable.

Mr. Murray thanked the boys for the keen interest they had taken in his demonstration, and presented to the club a booklet dealing with Romneys in New Zealand. Mr. Cumberbeach thanked Mr. Murray for placing his knowledge and experience at the club's disposal.

—P. A. McClenaghan, Chairman, Mosgiel
District High School Y.F.C.

Omokoroa Club's Concert

THE Omokoroa Y.F.C. held a concert and dance recently at the Te Puna Hall in aid of the Y.F.C. Memorial Fund, and Mr. G. Faulkner, who organised the concert, is to be congratulated on a worthwhile effort.

The programme was as follows:—Miss D. Lauder, pianoforte solo; Mr. A. Davis, humorous sketch; Mrs. W. Francis, song; Mr. Peterson, violin; Mr. Hartman, humorous monologue; Mr. D. Bothwell and Miss Belvie, tap dances; Mr. J. Hunter, songs; sketch, "The Better Bet," G. Steward, H. Boyes, A. Barnett, and M. Boyes; Mr. Searell, musical monologue; Mr. Brown, song; Mr. Peterson, violin; Mr. J. R. Wright, songs; playette, "Do Manners Influence People?" Mr. and Mrs. H. B. Allan; Reg. and Harold Boyes, songs; Mr. D. Bothwell and Miss L. Belvie, tap dances; Mrs. W. Francis, songs.

Dancing took place after supper, and the evening showed a profit of £26.

—O. A. STEWARD, Chairman,
Omokoroa Y.F.C.

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Western Bay of Plenty Sports

THE Western Bay of Plenty District held its first annual athletic meeting recently. There was a large number of competitors representing the Paengaroa, Pukehina, Te Puke, Welcome Bay, Tauranga High School, Te Puna, Tauranga, Omokoroa, and Katikati Clubs.

Hume, of Katikati, was the outstanding athlete of the day, winning the long jump, 100 yards junior event, 220 yards junior race, dead-heating with Robinson of Tauranga High School in the junior high jump and being placed third in the senior high jump and 220 yards hurdles. He compiled 19½ of his side's total of 32½ points. Holmes, of Katikati, put up a good performance in winning the 3-mile event from I. Spratt, of Paengaroa, who provided determined opposition, leading the field for the first seven laps.

In the competition for the I'Anson Shield Katikati came first with 32½ points, Paengaroa second with 19½, Tauranga and Te Puke dead-heating for third place with 16½ points.

The chairman of the district committee, Mr. W. P. Nichol, said the meeting had proved that in the ranks of the young farmers there were many promising athletes, and hoped that the meeting was the forerunner of many more. He presented the shield to the secretary of the Katikati Club (Mr. Hume) and congratulated the club on its fine win.

Results were:—Three miles: Holmes (Katikati) 1; I. Spratt (Paengaroa) 2; B. Vant (Paengaroa) 3. Senior relay: Katikati 1; Te Puke 2; Paengaroa 3. Long jump: Hume, 16ft. 10in. (Katikati), 1; G. Rowlandson (Tauranga) 2; Norris (Tauranga High) 3. High jump, senior: Stratton (Paengaroa) 1; Fulton (Pukehina) 2; Hume (Katikati) 3. Shot put: Phipps (Te Puna), 32ft. 11in., 1; Ron and Stratton (Paengaroa), dead heat, 2. Mile: Pye (Katikati) 1; Bayliss (Katikati) 2; Melton (Te Puke and Vant (Paengaroa) 3. 880 yards senior: Nettingham (Katikati) 1; Crampton (Te Puke) 2; Nichol (Te Puke) 3. 100 yards senior: Cameron (Pukehina) 1; R. Emmett (Tauranga) 2; Walker (Paengaroa) 3. 440 yards senior: H. Walker (Paengaroa) 1; T. Crampton (Te Puke) 2; Nettingham (Katikati) 3. 880 yards junior: G. Rowlandson (Tauranga) 1; Pye (Katikati) 2; D. Hunter (Te Puke) 3. 220 yards junior: Hume (Katikati) 1; Hunter (Te Puke) 2; G. Rowlandson (Tauranga) 3. 220 yards hurdles: I. Spratt (Paengaroa) 1; R. Emmett (Tauranga) 2; Hume (Katikati) 3. Discus throw: J. Reid (Pukehina), 60ft., 1; D. Ross (Paengaroa) 2; D. McNaughton (Welcome Bay) 3. Junior high jump: Hume (Katikati) and Robinson (Tauranga) dead heat 1; G. Rowlandson (Tauranga) 2. Junior relay: Tauranga 1; Tauranga High 2; Te Puke 3. 100 yards junior: Hume (Katikati) 1; Hunter (Te Puke) 2; Kappely (Tauranga High) 3. Hop, step, and jump: Hunter (Te Puke), 36ft. 10in., 1; McCracken (Katikati) 2; Bayliss (Katikati) 3.

Mid-Canterbury Debating

THE annual district debate for the Rotary Cup was held recently in the Ashburton Technical School Hall before a record attendance. Mr. E. Rhodes was chairman and Mr. A. Amos timekeeper.

In the junior debate, "That the Standard of Farming in Canterbury has Improved during the Last Decade," the representatives of the Ashburton Technical School Club, F. Amos, H. Bennett, and F. Greenslade, won from the Ashburton High School Club, 217 to 198.

In the senior debate Hinds, Methven, and Wakanui competed for the cup, and a team from the Catholic Club completed the quartet. The debate resulted as follows:—Hinds (W. Taylor, K. McConnell, and A. McKenzie) 221 pts.; Wakanui (H. L. Hyland, S. Watson, and B. Hyland) 210 pts.; Methven (G. Limbrick, M. Poff, and W. Stevens) 168 pts. The judge, Mr. L. A. Charles, presented the cup and congratulated the winning team. Supper was served by Miss E. Vesty and helpers.

—R. INCH, District Y.F.C. Secretary,
Ashburton.

Methven Club's Stock Judging

THE annual stock-judging competition of the Methven Young Farmers' Club was held recently on the property of Mr. R. J. Low, Mr. Low and Mr. S. Leask judging. Before the judging Mr. Low gave a demonstration on how to judge, the benefits of which were reflected in the day's results. Sheep judged were English Leicesters and Southdowns. The results of the English Leicester section were: B. Anderson, 71 points, 1; C. Grigg, 67 points, 2; R. Mangin, 64 points, 3. Southdown section: W. Hart, 75 points, 1; G. Hobson, 74 points, 2; C. Grigg, 73 points, 3.

The competition for the cup for the best judge resulted: C. Grigg, 140 points, 1; R. Mangin, 134 points, 2; W. Hart, 127 points, 3.

Afternoon tea was served by Mrs. Low, Mrs. McKay, Mrs. Harris, and Mrs. Callaghan. Mr. Low pointed out some of the mistakes made by competitors in judging, and congratulated members on the successful day.

—S. CALLAGHAN, Hon. Sec.,
Methven Y.F.C.

Reports on Club Activities

WESTERN SOUTHLAND

Seaward Downs.—Discussion on Y.F.C. memorial scheme. Applications received for associate judges in the cattle section at the A. and P. Show. Lincoln College Old Students' Association Scholarship discussed. A practice debate was held, the subject being "Which is the More Popular in the Home—the Newspaper or the Radio?" H. Martyn spoke on the former and C. Sellars on the latter; H. Martyn was adjudged the winner on the vote of the meeting.

EASTERN SOUTHLAND

Maitland.—Discussions on the Lincoln College Scholarship and the Y.F.C. land settlement scheme. Address by Mr. W. Peirson, veterinarian, Gore, on "The Care of Ewes Before and During Lambing." At the previous meeting a return debate with the Merino Downs Debating Society was discussed. L. A. Charlston gave a talk on "The Sheep Dog."

SOUTH OTAGO

Milton.—Mr. A. B. Stewart, advisory president, who is an Otago-Southland Council delegate, spoke to members on the annual general meeting of the Y.F.C. Federation at Hamilton.

Warepa.—General business. "Working bee" at the cemetery arranged. Report on recent club ball—profit £4 8s. Two debates were held during the evening with members of the Clinton Club. (1) "Tractors v. Horses"; Clinton took the tractor side and won the debate by 25 points to 24. (2) "Collective Farming v. Private Enterprise"; Clinton debated the side of collective farming and Warepa took private enterprise, the result being a draw. The Warepa speakers were as follows: 1st debate, G. Houliston, G. McKenzie, and D. Milne; 2nd debate, J. Shanks and G. McKenzie.

DUNEDIN

Dunback.—Newly-formed club. Officers elected: Advisory president, Mr. E. McLew; chairman, F. Pile; secretary, T. Stanley; treasurer, C. Frater; advisory members, Messrs. E. McD. Stevenson and F. G. Glover. One of the first Young Farmers' Clubs in New Zealand was formed in this district in 1934. The present members are young and keen, and the club has every chance of proving a success.

Mosgiel D.H.S.—Discussion of proposed district bays at the Dunedin Winter Show. A debate was held, three speakers on each side, the subject being "That the Pooling of Heavy Farm Machinery would be Advantageous." Mr. J. H. Cumberbeach gave the award to the affirmative team with the narrow margin of 202 points to 196. At a later meeting impromptu two-minute talks were given by all members present, the subjects being drawn from a hat. New member enrolled.

NORTH OTAGO

Enfield.—General business. Discussion on club finance. An interesting competition was held, members being asked to give their ideas on the "best dressing for boots."

Five Forks.—Two new members enrolled. Honours board nearly completed. Plans for a field day submitted by the special committee; a dance to be held in the evening. A committee of three was set up to arrange for the dance. The district secretary and the members of the Enfield club to be invited to the field day and dance. An extract from the "Journal of Agriculture" was read by the chairman, and freely discussed. Talk on the porina moth given by Mr. M. W. Austin, advisory president. Impromptu speeches by W. Simpson ("Tree-planting") and S. Bryant ("Weather Forecasts").

Herbert.—Newly-formed club. Officers elected: Advisory president, Mr. A. N. Woods; chairman, P. Marshall; secretary, W. M. McMillan; treasurer, I. S. Beckinsale. Mr. T. A. Sellwood, district Y.F.C. secretary, gave an address on the aims and objects of the Y.F.C. movement, and conducted a discussion on the activities of the organisation.

SOUTH CANTERBURY

Pleasant Point.—Football team selected to play Geraldine Y.F.C. Donation made to the Pleasant Point District High School Memorial Bursary. Discussion on Y.F.C. memorial scheme; two suggestions to be forwarded to headquarters. Mr. R. S. France congratulated the debating team, which had won the district debating contest; the team comprised J. W. Crombie, A. France, and W. Skinner. An address was given by Ft/Lt. S. F. Jackson, D.F.C., on farming conditions in Canada, U.S.A., and the British Isles, and the social life of those countries.

Waihaorunga.—Discussion on Y.F.C. memorial scheme. Some film-strips on "Soil Erosion" were exhibited.

MID-CANTERBURY

Ashburton.—Officers elected at annual meeting: Chairman, H. Bennett; secretary, N. White; treasurer, F. Greenslade.

Ashburton D.H.S.—Lecture by Mr. R. Inch, Department of Agriculture, on the various common weeds and small seeds. Bottles containing samples of seeds were handed around for identification, and specimens of weeds were also exhibited.

Hinds.—The impromptu speech contest for the Simmons' Cup was held, the winner being W. Taylor. The judge, Mr. D. M. Bruce, donated a trophy for the most-improved speaker, won by W. Keeley. Mr. H. L. Chisnall presented the trophies and congratulated the club on winning the Rotary Cup in the final of the inter-club debating contest. The winning team comprised W. Taylor, A. McKenzie, and K. McConnell.

Methven.—Reports on meetings of the A. and P. Association and the Farmers' Union by C. Wilson and W. Stevens respectively. J. Dixon appointed club reporter. I. Mangin and T. Callaghen elected as junior representatives on the A. and P. Association. Inspector of stock to be approached about the club making a brand and ear-mark book. Mr. G. J. Forman gave an address on the working of dogs both on the farm and at trials.

Wakanui.—Newly-formed club. Officers elected: Advisory president, Mr. R. Amos; chairman, L. H. Hyland; secretary, S. Watson. A programme was arranged up to the end of the year, as follows: August, lecture on "Lambing Troubles"; September, "Pasture Management"; October, demonstration on stock; November, debate and prepared speeches; December, lecture on "Maintenance of Farm Machinery." Mr. Amos offered a trophy for competition among members in stock-judging, pasture-judging, prepared speeches, and essays.

NORTH CANTERBURY

Amuri.—General business. Discussions on the memorial scheme and the land settlement scheme.

Cheviot.—Arrangements for a ball and a field day. Two debates to be held at next meeting. Two-minute talks given by members.

Hawarden-Waikari.—Memorial scheme and land settlement scheme discussed. Y.F.C. ploughing match postponed until next year. Committee set up to arrange for annual ball, proceeds to be devoted to the memorial fund. Films to be screened at next meeting. Mr. J. W. Earl, chairman of the Nasella Tussock Committee, reported progress so far made by the committee in combating nasella tussock.

MARLBOROUGH

Blenheim.—This club was revived some months ago after being in recess for three years. Officers elected: Advisory president, Mr. J. B. Laidlaw; chairman, A. Middlemiss; secretary and treasurer, M. W. Bishell. Membership has increased to 31. Fortnightly meetings are held. At the last meeting arrangements for a dance were finalised, and it was decided to hold a card evening; Seddon Club to be approached regarding a football match. At previous meetings impromptu speeches were given by the following: Mr. Ropert, veterinarian; Mr. H. Bigham ("Malting of Barley"); Mr. A. Hood ("Milling of Wheat"); Mr. W. G. G. Cudden (Films on Farm Machinery); Mr. Paton, formerly of Lincoln College ("Lincoln College Scholarships"). The immediate past president of the federation, Mr. T. E. Streeter, was present at one meeting, and spoke on Y.F.C. affairs. The Marlborough Y.F.C. District Committee has since met and elected the following officers: Chairman, Mr. W. Walsh (Blenheim Y.F.C.); vice-chairman, Mr. E. Jackson (Flaxbourne Y.F.C.); district secretary, Mr. D. R. Wilkie (Department of Agriculture); representatives of all three clubs in the district, Blenheim, Flaxbourne, and Seddon, are included on the committee.

Flaxbourne.—E. Jackson's resignation as vice-chairman was regretfully accepted, and F. Rudd elected to fill the vacancy. Decided to donate prizes to local school pupils for calf and lamb competitions. Roy Tombs nominated as the club's candidate for the N.Z. Refrigerating Co.'s scholarship at Lincoln College for Marlborough members. Discussion on Y.F.C. memorial scheme and sub-committee appointed to collect funds. Club to affiliate with the South Island Sheep Dog Association. At a meeting held a fortnight previous the Y.F.C. land settlement scheme was discussed, and also the Refrigerating Co.'s scholarship. A talk was given by Mr. J. Western on "Running Dogs at Trials"; the speaker made some helpful suggestions to improve the management of the club's dog trials. Mr. T. Sheehan, secretary of the Awatere Collie Club, explained the advantages of affiliation with the South Island Sheep Dog Association.

NELSON

Murchison.—Business meeting. Discussion on the Y.F.C. memorial scheme, speakers being C. Rait, J. Horner, J. Thurlow, and C. Peacock.

WESTLAND

Kokatahi-Koiterangi.—Another new club, the Y.F.C movement breaking fresh ground in this district. It is hoped that it will be the forerunner of many more clubs in Westland. The club secretary is L. J. Mitchell, Koiterangi, Hokitika.

HOROWHENUA

Levin.—New member enrolled. Decided to appoint a club reporter at next meeting. Social evening to be held. Mr. N. Thomson, recently returned from overseas, gave a talk on the peoples of Egypt, Italy, and India.

MANAWATU

Halcombe.—Discussions on Y.F.C. memorial scheme and the Feilding Y.F.C. Stock Show. Address on Norfolk Island by Mr. H. Brewster, of Feilding. The secretary of this newly-revived club is M. J. Ferguson, Mt. Biggs, Feilding.

Kairanga.—Discussion on Y.F.C. memorial scheme. Mr. G. H. Dawick, secretary, N.Z. Jersey Cattle Breeders' Association, exhibited films on prize cattle, etc., at the previous meeting. A talk to be broadcast in the Y.F.C. session from 2ZA, Palmerston North, was discussed. It was left to the committee to select a subject and arrange for the talk to be written up. A. Neilsen elected captain of the football team to play a return match with Rongotea Club. Arrangements for a dance. Two members gave four-minute talks: B. Devine ("Pampas Grass") and T. Zurcher ("Handling a Young Sheep Dog"). Address by Mr. A. A. Johnson, of Massey College, on "Farming in Great Britain."

Pohangina.—D. Beckett appointed associate judge of school calf competitions. Parents' and friends' evening to be held. Lecture by Mr. P. W. A. Balmer on "Faults and Blemishes to Look for when Purchasing a Horse." Mr. J. E. Bell, Department of Agriculture, Wellington, gave a talk on "Regional Planning"; Messrs. A. V. Lithgow (hon. secretary, Wellington Council) and S. Freeman (Dominion Organising Secretary) assisted Mr. Bell in instructing members how to fill in the details on survey maps from the point of view of stock and production statistics.

Whakaronga.—New member enrolled. Five members appointed associate judges in Boys' and Girls' Agricultural Clubs' calf-judging. Debate against Pohangina Club, "That Modern Mechanisation is Detrimental to Farming." Speakers: Pohangina (affirmative), J. Howell, A. Macdonald, J. Leamy, and C. Gavin; Whakarongo (negative), I. Tabor, J. Spall, I. Vautier, and T. Wilson. Mr. Mills awarded the decision to Whakarongo by 438 points to 401.

WANGANUI

Hunterville.—Discussion on the Y.F.C. memorial scheme and Lincoln College scholarship. Dance to be held to raise funds for the memorial. Mr. R. Pickfors, a foundation member of the club and a returned prisoner of war, spoke on farms and farming methods in Canada, England, and Germany.

Marton.—Discussion on urgent circulars from Dominion Organising Secretary dealing with Y.F.C. memorial and land settlement schemes; copies of the questions in the latter circular distributed to members. Sub-committee appointed to purchase books for the club library. Congratulations passed to the senior A debating team on winning its way to the final in the district debating contest. Election of J. M. C. Shield as treasurer in place of W. Dickey. Letter received from a past chairman of the club, F/Sgt. W. B. Gray, now with the R.N.Z.A.F. in England, thanking the club for his Christmas parcel. An address on "Noxious Weeds and Methods of Eradication" by Mr. John Robinson, weeds inspector, Rangitikei County Council, who said that in most cases sodium chlorate spray was the most effective and simplest. The chlorate is **not** dangerous; a tablespoonful of common salt to each pound of chlorate will ensure safety. The speaker considered that young farmers have to undo the damage done by their forbears; weed control was a distasteful job, but one in which he hoped they would cooperate. At a club field day at Massey College the party was received by Prof. G. S. Peren, Principal of the college, and conducted round by Mr. L. A. G. Barrett, literary and publicity officer, assisted by Mr. Rae, lecturer in animal husbandry.

Waimarino.—Report on annual dance held at Ohakune. Lecture by Mr. A. R. Dingwall, Department of Agriculture, on "The Casting and Other Worms." A field day was held on Mr. D. J. Barry's property, the owner giving a demonstration on his Southdowns.

CENTRAL TARANAKI

Toko.—This club has recently resumed activities, after nearly four years' recess. Officers elected: Advisory president, Mr. T. T. Murray; chairman, R. Anderson; secretary, Hec. Milne; treasurer, C. Walter.

WAIRARAPA

Carterton.—Teams selected for the inter-club debating contest: Junior, D. Bassett, F. Playle, J. Jones; senior, N. Meek, R. McKenzie, R. A. Card. These teams will hold a practice debate at the next club meeting. The Y.F.C. land settlement and Y.F.C. memorial schemes were discussed. Talk by B. Brassel on "The History and Development of the Atomic Bomb."

SOUTHERN HAWKE'S BAY

Ballance.—General business. Address by Mr. Rankin, dairy inspector, on "Some Aspects of Dairying."

CENTRAL HAWKE'S BAY

Waipukurau.—This club has recently resumed activities after over three years' recess. The first meeting was addressed by Messrs. J. L. Sunderland (chairman, Wellington Y.F.C. Council), V. W. Stratford (president, Waipukurau branch of the Federated Farmers), and F. J. S. Holden (Department of Agriculture, Dannevirke). The following officers were elected: Advisory president, Mr. J. W. Harding; chairman, J. Mackie; vice-chairman, P. Mills; secretary and treasurer, A. H. Wilson.

NORTHERN HAWKE'S BAY

Wairoa.—Business meeting. Discussion on Y.F.C. memorial scheme. A member selected as the club's applicant for the Lincoln College Old Students' Association scholarship. Fifty-one members of this club have served in the overseas forces, 5 being killed, 6 wounded, 1 missing, and 3 prisoners of war.

TE KUITI

Te Anga Central.—General business. Talk by Mr. G. A. Davey on soldiering and his experiences as a prisoner of war.

KING COUNTRY

Taumarunui.—Election of committee, etc. Discussions on the Y.F.C. memorial and land settlement schemes. A talk on the past activities and the aims and objects of the Y.F.C. movement was given by Mr. F. Duncan.

WAIKATO

Okoroire.—Discussion on future lectures and activities. Address by Mr. Schofield, a solicitor from Matamata, on "The Legal Aspects of Farming."

Te Pahu.—General business. Sum of £5 to be donated to the Waikato District Committee. A. E. G. Pearson elected as a delegate to the district committee. The club secretary (A. Pearson) gave a talk on "Cheques." Officers elected at the annual meeting: Advisory president, Mr. F. Whittaker; chairman, J. Anderson; secretary, A. E. G. Pearson; treasurers, P. Nicol and F. Smith.

WESTERN BAY OF PLENTY

Katikati.—General business. Mr. H. B. Capamagian, advisory president, gave an interesting account of his experiences in the Crete campaign.

Omokoroa.—Business meeting. Four new members enrolled.

Te Puke.—Stock-judging competition to be held on Mr. L. Ashe's property, Te Matai Road. Concert to be arranged by the Omokoroa Club in the Paengaroa Hall, profits for the Y.F.C. memorial fund. Lantern lecture by Mr. A. V. Allo, Department of Agriculture, on "Feed Flavours in Cream."

Tauranga.—Three new members enrolled. Club birthday party to be held. Discussion on rules for a maize-growing competition. Dance to be held in the Oropi Hall. Address by Mr. Winters on "Stock Ailments and their Treatment."

Te Puna.—Arrangements for a pasture competition. Address by Mr. Voss on "Farming Overseas."

Welcome Bay.—Suggestions in discussion on the Y.F.C. memorial scheme to be brought up at a special meeting in Tauranga to stimulate more interest in the Y.F.C. movement. Two new members enrolled. Special committees set up to arrange a dance and a birthday social.

EASTERN BAY OF PLENTY

Opotiki.—B. Gaskill appointed representative on A. and P. Association. R. Fisher reported on recent meeting of the district committee. Resolved to resuscitate the Opotiki Y.F.C. Pig Club. Stock-judging field day to be held in near future. Special committee set up to make arrangements for a dance. Ten members to give impromptu speeches at next meeting. Challenge issued to Tablelands debating team. Debate to be held with Woodlands debating team, subject to be "That Films at Present Distributed in New Zealand are not in the Best National Interest." Messrs. K. Grant and D. Sherson spoke on "Debating."

Waimana.—Discussion on Y.F.C. memorial scheme. Debate with Nukuhou; subject, "That the Guaranteed Price Scheme is of Benefit to Farmers." Both teams scored 313 points. Mr. Heather acted as judge. At the previous meeting delegates from the Waimana and Nukuhou Schools reported on rules for school calf competition for which the Waimana Y.F.C. has presented a trophy. Talk by Mr. R. Addison, jun., on "Belts and Pulleys." At a field day on Mr. G. Hewitt's property, Waimana, Mr. Hewitt demonstrated on a dairy cow. The field day was held primarily for the purpose of selecting a team to represent the club in district stock-judging contests.

AUCKLAND

Clevedon.—Three new members enrolled. Report on meeting of district committee held recently at Runciman. Lecture by Mr. H. W. Carbury, Department of Agriculture, on "Veterinary Matters."

East Tamaki.—New member enrolled. Discussion on the Y.F.C. memorial scheme. Address by Mr. P. Martin Smith on "The Conflict Between Town and Country." The speaker considered that industries should be dispersed throughout the country and so tend to arrest the drift towards the towns; each industry should house its own workers in homes centred around the factory. Fifteen members visited the factories of N.Z. Plywood and the N.Z. Forest Products. Members saw the manufacture of plywood from the tree trunk to the finished article at the N.Z. Plywood Factory, Penrose; at N.Z. Forests Products factory the chipping and pulping of pinus logs, together with the pressing and cutting by an automatic cutter, and also the drying process, created much interest.

Franklin.—General business. Impromptu speeches by members. Mr. E. Aldridge lectured on "Public Speaking." The secretary was instructed to circularise other clubs about a proposed junior inter-club debate. Decided to build a club room as a memorial to members who had died on active service; objective to be £250 by Christmas; this to be entirely separate from the national Y.F.C. memorial scheme, which the club will support to the fullest. A special meeting of the club was held, members of the St. John Ambulance and of the staff of Auckland hospital being present to take blood donations from club members and several local residents who had volunteered. The doctor in charge expressed great satisfaction at the amount collected—about 2½ gallons—and thanked the donors for assisting.

Harrisville.—Two new members enrolled. Lecture on "Bee Keeping" to be given at next meeting. An address on "Debating" was given by Mr. Wily, of Puni.

Pukekawa.—Business meeting. Report on the recent victory dance; profit of £7 1s. Discussions on the Y.F.C. memorial and land settlement schemes. Decided to form a club reference library. Preparatory arrangements made for the club's annual concert. Discussion on debating and the age limits for junior contestants.

Pukekohe East.—Field day held at the Pukekohe East School. The demonstrations included the following: Dairy cow (Mr. R. T. Lewis); baconer and breeding pigs (Mr. C. Hawke). Membership has increased to 30. The officers are as follows: Advisory president, Mr. J. W. Morgan; chairman, S. L. Denize; secretary, C. J. Morgan; treasurer, B. D. Wright.

NORTH AUCKLAND

Kaukapakapa.—Mr. K. A. Sneddon, solicitor, Helensville, willing to address the club at a future date on "Legal Aspects of Farming." Flying Officer F. E. H. Millar, a member of the club, recently awarded the D.F.C. Mr. G. H. Dawick, secretary, N.Z. Jersey Breeders' Association, accepted an invitation to address the club. Letter from Mr. Storby, B.Sc., Hamilton, asking the club's opinion regarding the future use of human manure for agricultural purposes. Six films from the Auckland Education Board exhibited at the meeting.

Whirinaki.—Arrangements for a visit by an apiary instructor. Address on "The Working of a County Council and a Hospital Board" by Mr. Rae Cox, member of Hokianga County Council, chairman of the Hokianga Hospital Board, and also chairman of the Hokianga Co-op. Dairy Co.

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"Friendship improves happiness, and abates misery, by the doubling of our joy and the dividing of our grief."—Cicero.

THERE are many definitions of friendship. In my opinion, Jeremy Taylor's is one of the finest. He says: "By friendship I mean the greatest usefulness, and the most open communication, and the noblest suffering, and the most exemplary faithfulness, and the severest truth, and the heartiest counsel, and the greatest union of mind of which brave men and women are capable." Truly a masterly summary of the qualities which constitute an ideal friendship.

The cheery, hail-fellow-well-met type of woman usually has hosts of friends—in fact, she makes friends wherever she goes—but her sister who is of a quieter, more retiring nature, invariably finds herself tongue-tied and ill at ease with strangers, even though she is anxious to be friendly. To her the preliminaries of friendship present such a hurdle that very often she is unable to overcome her lack of confidence sufficiently to establish any real degree of friendliness with the newcomer at all. Each failure makes it more difficult for her to achieve the social poise for which she longs. If only those who suffer from this form of shyness would realise two important facts: first, that every friendship has to have a beginning (the greatest of friends were once unknown to each other); and second, that the average person is desirous of being friends, and wants to be liked and understood, they would not feel so diffident and awkward when introductions are being made.

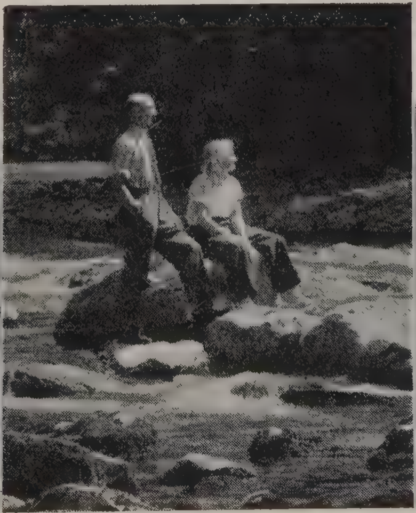
The main thing is to be genuinely interested in other people—their work, and experiences and ideas. Never mind if their interests are not the same as yours, for it is "a common observation that differences of taste, understanding, and disposition are no impediments to friendship, and that the closest intimacies often exist between minds each of which supplies what is wanting to the other." Sympathy and sharing create the common meeting ground on which friendship is based. There is a lot of wisdom in the axiom: "The only way to have a friend is to be one."

Desirable as it is to enlarge our circle of friends, the pleasure of making new contacts should not cause us to neglect those loyal souls who have proved their constancy many times over—

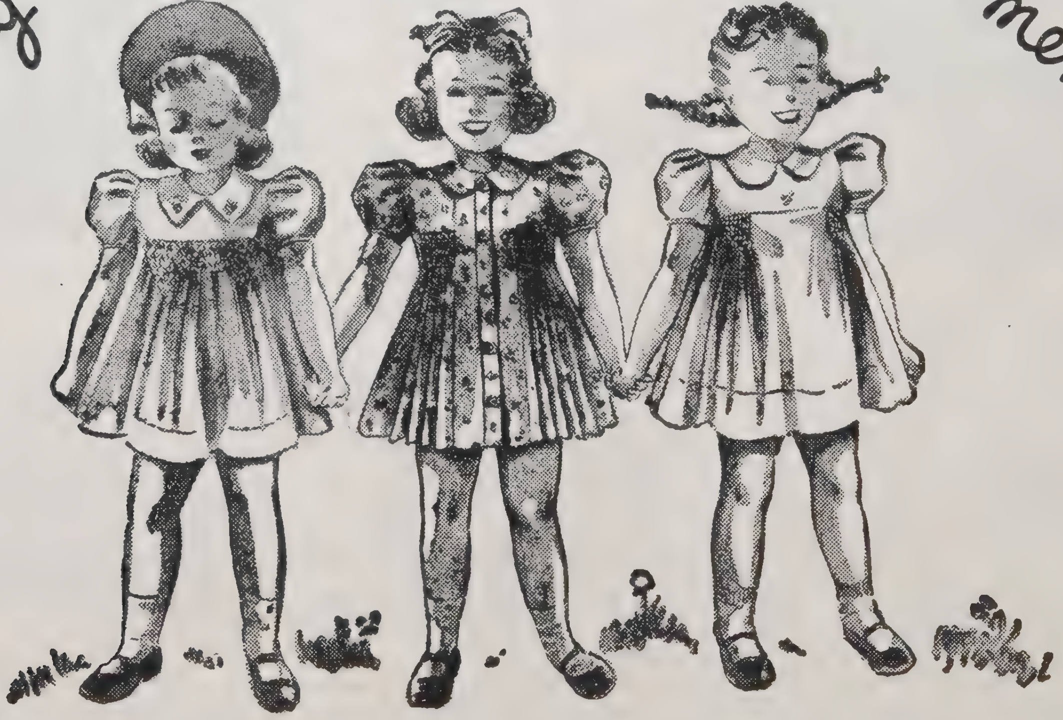
. . . . The march of years is slow,
And more and more, as they depart, we know
There is no better gift at the road's end
Than the warm hand of a beloved friend.
We live, we smile, we suffer, and we show
Our hearts to those who prove they love us so,
They stand with us in sunset's afterglow.
We are reminded by the lives they mend:
Old friends are best!
Through all the changing times that come and go,
When summer lingers, when the cold winds blow,
There will be one to comfort and defend,
And whisper, as the first faint stars ascend,
And the celestial voices louder grow:
"Old friends are best!"

We are indebted to them for "the comfort of feeling sure with a person; having neither to weigh thoughts nor measure words, but pour them all out just as they are, chaff and grain together, knowing that a faithful heart will take and sift them, keep what is worth keeping, and then, with the breath of kindness, blow the rest away." It is for us to express our sincere appreciation and devotion in adequate ways, and may the gracious example of their friendship inspire our relations with those about us.

Mary



big style news for little women



Betsy Ann designed them especially to make your little miss just a little more adorable. Every feminine wile of smocking and frill, gathering and tuck is here to give these frocks that something extra that proclaims them Betsy Ann. Discover them in any of the leading drapers—pretty enough for any party, thrifty enough for every day. See them in plain tone silks and dainty florals, with a cut that brings new style to children's clothes.

Betsy Ann

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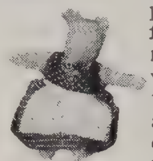
Xmas Toys for British Children

WHEN I visited the home of Mrs. E. T. Porter at Oriental Bay recently I felt just as though I had stepped into Toyland. Plush rabbits and teddy bears reclined upon the couch, armchairs were occupied by ducks, dolls, and cats, and a troupe of horses cantered across the smooth, shining surface of the grand piano, with dogs in close pursuit. . . . .

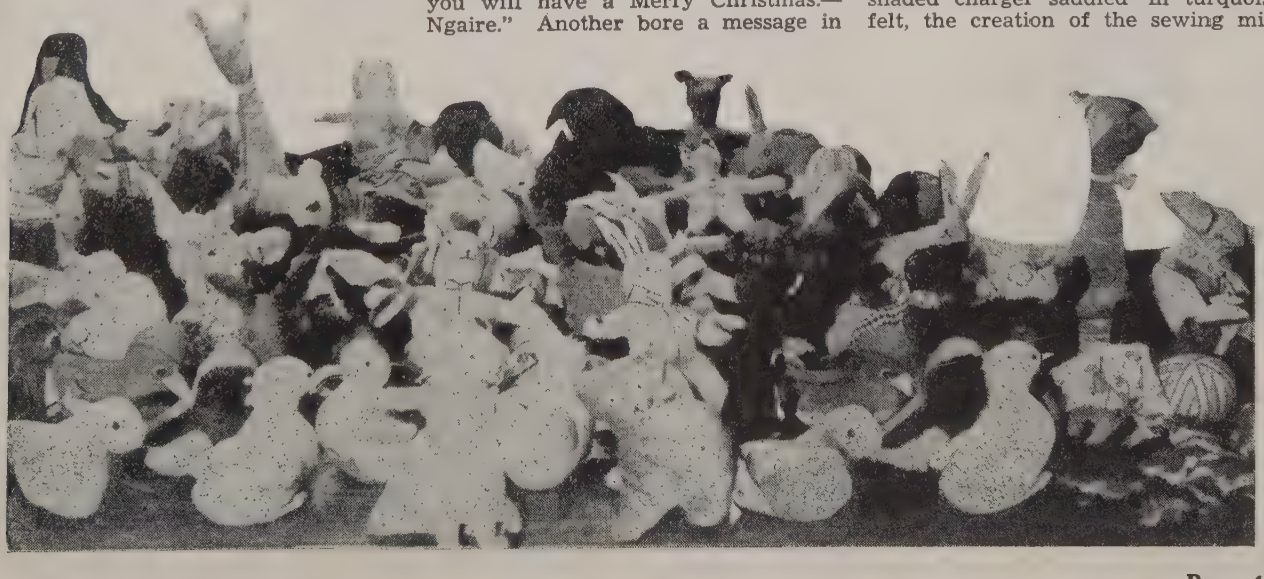
DOWNSTAIRS in the spacious billiard-room toys were in even greater evidence—two large boxes were filled to overflowing with soft toys of every description. They spilled on to the settee, the corner table was covered with them, and they were arranged in neat rows on top of the billiard-table. Even the garage had been commandeered to provide storage space for a bale of flock and sacks of dish-cloth clippings, mop-ends, snippings of pyjama-cloth, etc., which are used as stuffing. These were only a portion of the playthings made by my hostess and her helpers in order that some of the British children who have been born during the war years and never owned a toy may receive appropriate largesse from Santa Claus this Christmas. The first consignment is already on its way and is destined for East End youngsters in the dock area. The remainder will be forwarded to the High Commissioner for New Zealand, Mr. Jordan, for distribution.

Nursery Favourites

Many of the items on display were the work of pupils of Queen Margaret College. I was introduced to the White Rabbit from "Alice in Wonderland." He had long velvety ears and a fluff of white fur for a tail. Flopsy, Mopsy, Cottontail, and Peter were here, too, accompanied by a multitude of relations of varying size and colouring—there were pink rabbits, brown rabbits, blue rabbits, beige rabbits, and one comical olive-green fellow nibbling a carrot tucked between his paws. Ducks were nearly as numerous. One had a note attached to his bluish plumage: "To my little friend. I hope you will like this duck and I hope you will have a Merry Christmas.—Ngaire." Another bore a message in equally painstaking script: "I hope you will have as much fun playing with my toy as I did making it.—Lorna."

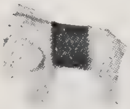


There was a very patriotic teddy clad in a striped red skirt, white apron, and blue bodice; a black velvet cat of the Cheshire variety, if facial expression was anything to go by; a furry companion with green eyes and real whiskers of dark hair; and a plump knitted duckling. Though the horses were all cut from the same pattern they were made from such a variety of materials that no two were alike. I was particularly attracted by a chestnut beauty, and one in polka dot print the colour of cornflowers, the cream felt saddle being outlined in minute blue feather stitching. The white elephant in his elegant scarlet trappings would be an asset to any playroom, likewise the solitary lamb with his innocent mien and frolicsome gait that set the tiny silver bell fastened to his neck ribbon a-tinkling. Bruin Bear paraded a placard: "I am very lonely. I have come from New Zealand to find someone to cuddle me." The prancing mulberry-shaded charger saddled in turquoise felt, the creation of the sewing mis-



tress at Queen Margaret's, was reminiscent of the steeds depicted in ancient Chinese prints.

Chilton St. James is another school which is undertaking the manufacture of toys in large numbers. A well-known Hutt resident specialises in knitting balls from gay oddments of wool. An opening is left in the outer cover just big enough to insert a worn-out tennis ball, the slit is sewn up, and then the variegated ball is ready for use. The latest contribution from a Kelburn needlewoman included twin ducks of yellow towelling with boot-button eyes, orange bills, and webbed feet; an enormous elephant of ebony hue and a smaller, mole-coloured brother; the golden goose of legendary fame; a penguin in immaculate black and white plush; and "Smiling Sambo" resplendent in royal blue trousers, vieux rose cummerbund, and scarlet top hat set at a rakish angle upon his dusky head. A soldier had made a most appealing Scotch terrier from an army blanket (he had used the blanket for stuffing, also, judging by the animal's weight when I picked him up to stroke his ears). His little red tongue protruded eagerly from his mouth and the tag on his collar read: "Please may I go, too?"



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You May Help

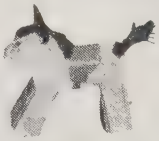
It is hoped that this article may inspire some "Good Neighbours," and perhaps some countrywomen's organisations, to increase Santa Claus' stocks for distribution in the homes of British children this Christmas. The resources of patchbags are seemingly inexhaustible, and those desiring toy patterns or information may communicate with Mrs. A. E. Lefeaux at 14 Hay St., Wellington.

When I was looking through a folder of paper patterns for toys Scotty's was the first shape I saw, in company with Rover the spaniel and Tabitha cat. There was a duck, a horse, and a kangaroo, as well as rabbits in various positions and an elephant whose portly girth required a proportionately large amount of material. The most popular pattern of all was that of a teddy bear—with the addition of a different head it could be transformed into a doll, a rabbit, or a golliwog, and it lent itself to an endless variety of garb.

Wonders from Patchbag

I was astounded to see what could be accomplished with odds and ends of materials culled from the patchbag. Any pieces big enough to make garments are handed over to the UNRRA committee—the toys are cut out from scraps. I delved into boxes full of remnants of flowered silks and striped ginghams; coarse hessian and vivid plaids; chenille and chintz; taffetas and towelling; linens both plain and floral; bits of fur and felt and leather; silk jersey weave and suiting. Loveliest of all was a length of sapphire velvet: I expect it will be reserved for some very special toy. I held up a strip of jade brocade shot with silver—just the thing for trimming Mrs. Rabbit's new frock; white broderie Anglaise is ideal for aprons, and a discarded cuff of accordion-pleated satin will form a dainty doll's ruff; an animal's head can be made from this six-inch square of heavy coating or that piece of trouser flannel. The moth-eaten parts having been removed, the major portion of this khaki uniform sleeve has already been utilised to produce several sturdy ponies.

Woollen fabrics are in much greater demand for toymaking than other materials, and Mrs. Porter has a special flair for converting discarded woollens into the most delightful toys. An old dressing-gown provided the wherewithal for half a dozen teddies. She had managed to get the head of another bear from the few inches of gold velour left over from the handsome curtains framing the windows overlooking the harbour. A grey boucle frock and a khaki coat made the most realistic-looking horses, their manes and tails being fashioned from the cloth that formerly graced the billiard-table. I much admired a trio of dogs—a fox terrier and his sporting companion in checked tweed both had had ears and "patches" cut out of a black felt hat, and the brindled member of the party possessed these features in tan leather. The lifelike stance of these canine miniatures had been obtained by means of wiring. Mrs. Porter's piece de resistance, however, was a little white donkey made from a felt table cover. His hooves were inked in so cleverly that only the closest inspection revealed that they were not of a contrasting material, and his charms were further enhanced by a bridle and crupper of emerald suede, and a crimson and peacock blue saddle. Nearby stood an alert-faced kangaroo, the work of Mrs. Corrigan, who is an expert where toymaking patterns are concerned.



Santa Claus' Aides

The idea of sending toys to England originated with Mrs. Lefeaux, and capably assisted by Mrs. Porter and Mrs. Corrigan, together with a few other friends (about a dozen in all), the project has made remarkable progress. An exhibition of their handiwork was arranged in Wellington at an early date, resulting in many offers of help from interested volunteers. Thus, this small group of enthusiasts has every chance of achieving the goal they have set themselves—one thousand toys to reach Britain in time for Christmas.

The quality and attractiveness of the six hundred already completed is indicative of the care and loving effort that have gone into their making. Those who have so willingly sacrificed their leisure have used it to good purpose. It was truly a gracious thought, in keeping with the Yuletide spirit of good will, which inspired this endeavour to give joy to children who have spent a considerable part of their lives in air raid shelters and whose childhood has been bereft of so many of the ordinary everyday pleasures enjoyed by the children in this country.

Care of the Elderly

Contributed by
The Department of Health

IN a good many of our homes there are old folk, grandmother or grandfather, who, having lost their life partner, have come to spend their declining years in less loneliness with a son or daughter. They are not always easy to manage, and there are points to be watched in their care.

Some Occupation

Time goes better, and old folk are healthier, if they've something to do each day. Retirement shouldn't mean waiting for time to pass, playing patience, or doing crossword puzzles. The old person with no occupation to keep him or her busy, and without a hobby for leisure hours, is a problem that tends to fray the household's temper. Pottering about the garden or working or other hobby saves the old from premature decay and senility. So encourage grandma or grandpa to do something—the longer they use their minds and their bodies the longer they'll last in full possession of all their faculties.

As long as life is healthy and satisfactory there's every reason for prolonging it—but as they get older aged folk want to dodge bathing and avoid changing clothes frequently, and they develop a dislike for fresh air in rooms. They have to be supervised in these things. The reason for wanting to keep windows closed is that they feel the cold more than others do, because their circulation is sluggish. So we have to keep them warm without allowing stuffiness and stagnant air. Often they have bother with the regular daily bowel action. They can help themselves with massage, starting from the right groin working up to the liver, then across the stomach to the opposite side, next down to the left groin. This helps a lax abdomen to get rid of flatulence. If aperients are necessary and liquid paraffin fails, try rhubarb, aloes, senna, or cascara—one or other of them—and keep ringing the changes, so that they won't get used to the one drug.

Eat Rightly

In old age appetite, digestion, and the absorption of food all deteriorate, and, if living by themselves, old people tend towards a very limited and ill-balanced diet. If living with relatives, they should be encouraged to eat rightly, for then they'll be healthier and have less constipation.

Healthy old people should have a good breakfast, including some protein, whole cereal porridge, followed by a strip of bacon or liver or an egg or fish. If elderly folk are weighty or tending to get fatter as they do less and less exercise, they have to cut down on the amount of bread and other carbohydrates they eat. As it happens, most of them do the very opposite, tending to live more and more on bread and butter, cakes and scones, and a cup of tea. The lean type can stand such a diet better than the obese, but it's bad for both really. The amount of carbohydrate eaten should go by the rise or fall in the weight. Wholemeal bread is the best carbohydrate for the aged, potato the next best. The overweight ones should fill up on vegetables and fruits. This hits back at those caring for the old folk, as vegetables have to be attractively cooked or nicely prepared raw, when the appetite is poor.

We Who Are Lonely

We who are lonely
Walk alone
out in the lovely day.
Old and young
have known alike
The fret of the lonely way.
Friends are the choice
that the earth
shall give
When a lonely heart goes by.
The dog that follows,
the child that smiles,
The wind and the sea
and the sky.

—*Roma Henden.*

Fat should be eaten sparingly from 45 years onwards, and especially if there's overweight in old age. If there's any blood vessel trouble—hardening of the arteries more than normal—meat fats, egg yolks, and cream will have to be cut out. If there's a history of strokes or heart disease or gallstones in the family, they should be reduced. In these cases cod liver oil or a substitute should be taken to get sufficient vitamins A and B. Tea, coffee, and very moderate alcohol are useful stimulants—food and hot drinks at regular intervals are the best revivers for the old. Food also becomes the best sleep producer; if wakeful, try them with a glass of hot milk.

◆

Youth Hostels Movement Revived

THE recent decision to revive, and if possible extend, the activities of the Youth Hostels Association of New Zealand will be welcomed by all those interested in fostering a love of the countryside, the protection of the country's natural and historical features, and in the encouragement of health by promoting a more simple standard of living.

On the establishment of the association in 1932 chains of hostels were established on Banks Peninsula, in North Westland, and in the Oxford district, but war interrupted plans for the extension of a service which had provided most efficiently accommodation and simple meals for thousands of people seeking recreation in the out-of-doors.

With the revival of the association, interest has been created in other centres in New Zealand where suitable country is within easy reach of towns and cities, and contact has been made with similar organisations overseas with a view to co-operation. Those requiring further information about the association may communicate with the hon. secretary, Mr. V. M. Readman, at 14 Fleming Street, North Beach, Christchurch, E.3.

◆

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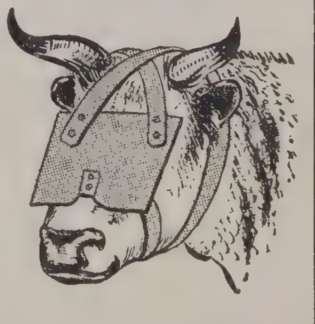
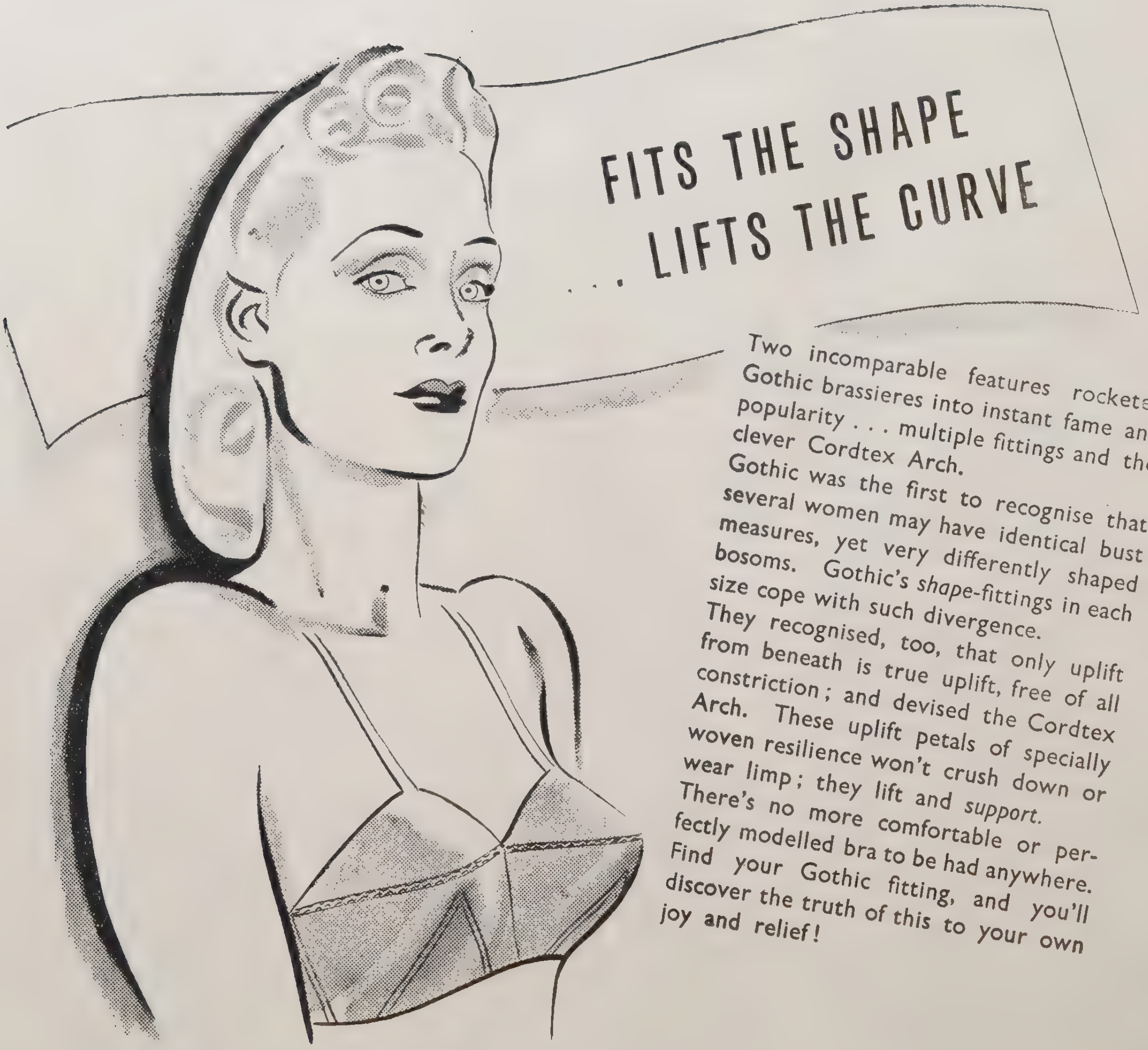


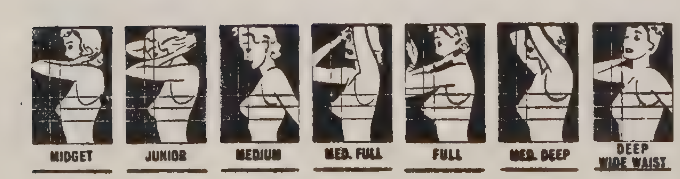


Two incomparable features rocketed Gothic brassieres into instant fame and popularity . . . multiple fittings and the clever Cordtex Arch.

Gothic was the first to recognise that several women may have identical bust measures, yet very differently shaped bosoms. Gothic's *shape*-fittings in each size cope with such divergence.

They recognised, too, that only uplift from beneath is true uplift, free of all constriction; and devised the Cordtex Arch. These uplift petals of specially woven resilience won't crush down or wear limp; they lift and *support.*

There's no more comfortable or perfectly modelled bra to be had anywhere. Find your Gothic fitting, and you'll discover the truth of this to your own joy and relief!



IMPORTANT! Shape-fitting Gothics cannot be bought satisfactorily over the counter. Ask for a fitting.

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Cordtex PATENT

Home Sewing and Mending Equipment

LIKE many other occupations, sewing needs a "kit of tools," and to do the home mending and dressmaking satisfactorily suitable equipment is necessary, writes Eva Topping, Rural Sociologist, Department of Agriculture, Auckland. Even for the very simplest tasks like sewing on buttons, mending tears, and darning the family hosiery, needles, threads, thimble, and scissors are essential in every home. To these are added other items according to the class of work to be done, until a considerable stock of "tools" is accumulated.

AT the other end of the scale comes the sewing machine, and, whether electrically controlled or operated by foot or hand, it is the home sewer's greatest friend, and also the most expensive part of her equipment. Between these two extremes come many other aids and necessities for the needlewoman, and if a list is made of all the things connected with sewing, it can be checked over with the articles already on hand and those you would like to own when they are once more on sale.

A collection of the most essential items for sewing and mending with a decorative box to contain them make an attractive and much appreciated gift for the bride.

For Family Mending

For the family mending a good selection of small haberdashery will be required. Darning needles in assorted sizes, long heavy ones to stretch the entire width of a darn before being pulled through, and fine ones for mending silk or cotton hosiery, underwear, and table linen; mending wools in various shades to suit the socks, stockings, jerseys, and underwear; cards of silk substitute for silk or lisle stockings and locknit lingerie, and cotton for interlock or woven cotton goods will be necessary. Tape is invaluable in mending, as the sides can be hemmed down without turnings, which reduces the bulk of the mend and helps to make an inconspicuous repair. Heavy linen thread is the most satisfactory medium for replacing buttons on men's clothing, top coats, and raincoats, but cotton in size 24 in black or white is useful when no linen thread is available. A bodkin or safety pin is needed for re-threading drawstrings or inserting elastic if one is fortunate enough to have it on hand now. Medium-sized scissors are the most useful for mending. Buttons in various sizes, shapes, and materials are needed, small ones for replacing fastenings on shirts, larger ones for pyjamas, and bone or composition ones in black and grey for sewing on trousers, shorts, and overalls. Many women use a wooden "toadstool" when darning large holes in socks and stockings, but this is not a necessity and is a matter for individual choice.

"Ah, I knew I should find it here!"

"Where shall I look next?"

Dressmaking Needs

For dressmaking many other things are added to the sewing equipment; each one supplies a specific aid to the ease and efficiency with which the work can be carried out. A large pair of cutting-out scissors, tape measure, needles, thread, and pins are the absolute minimum of requirements, and to these other items can be added when they are required by the home dressmaker.

On the next page is a list of most of the sewing goods and the purposes for which they are required. Many of the articles will be found in the photographs if you look for them.

" . . . So many small sewing needs."

Needles:
- **Darners, long, heavy:** For mending socks and heavier woollen goods.
- **Darners, fine:** For artificial silk knitwear stockings, cotton interlock, table linen, etc.
- **Sewing, various sizes and lengths:** For all varieties of sewing.

Crewel: For heavy cottons and threads, embroidery cottons, etc.

Bodkin, Safety Pin: For inserting drawstrings, tapes, elastic, and to reverse pipings, casings, etc.

Crochet hooks, bone and steel: Repairing heavy socks by crochet patches, repairing ladders in woollen wear, decorative edgings, etc.

Latchet hook: Repairing short ladders in artificial silk hosiery.

Darning wools: Hosiery and woollen goods repairs.

Darning cottons: Interlock goods, table and bed linen.

Darning silks: Silknit wear and stockings.

Wooden toadstool: Aid in darning large holes.

Collection of buttons: Various fastenings.

Tapes: Retaping pillowslips, curtains, and general repair work.

Fasteners: These have been very difficult to obtain, and any removed from discarded clothing should be saved for future use.

Linen thread, black: For button replacements.

Linen thread, drab: Mending mattresses and pillows, etc.

Sewing cotton, black and white in sizes 24, 36, 40, 50, 60: Thicker sizes for mending and the fine ones for machine or hand sewing.

Basting cotton: For tacking garments, as it is more economical than the sewing cotton.

Bias binding, various: These bindings are useful when mending and renovating, but they are not often on sale nowadays.

Scissors, large: Cutting out garments, cutting heavy material for patches, etc.

Scissors, medium: Easier to manipulate when mending than the large scissors.

Scissors, small: Cutting buttonholes; small jobs; removing tacking threads; unpicking.

Tailor's chalk: Marking material for joining parts, position of hem line; buttons and buttonholes, etc.

Tracing wheel: Similar uses to chalk.

Pins

Tape measure

Skirt measure stick

Beeswax: For waxing thread for heavy jobs such as replacing buckle on sandal, shoe buttons, etc.

Knitting needles: Sizes to suit work.

Finger guard

Thimbles

Sewing machine

Pinking scissors: These are an expensive item and difficult to obtain at present, but a pair is a great boon and time-saver for the home sewer.

Figure form: This is a great help and kits for making up at home can be bought and some stores will make them on the customer. It is a tedious business, but the resulting dummy is very satisfactory and makes for speed in completing a garment for oneself.

Workbox for Oddments

There are so many small sewing requisites that a "place for everything" becomes a necessity.

Have you ever searched through your machine drawers, looked on the kitchen shelves, turned out the chest of drawers, and even hunted in the bottom of the wardrobe for that new packet of darning needles or some

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The seating accommodation on long-distance trains is frequently reserved to capacity before travel date and further reservations are possible only through timely cancellations. Should a change of plans prevent your use on due date of seats reserved in advance, please arrange cancellation without delay so that other people may use them. Such consideration will be appreciated; also it will save you the additional charge payable for non-use of "reserves" without the requisite notice.

Every Seat Is Needed

other little thing you needed to do the mending? Did someone take your best scissors to gather flowers, or did the children have them to cut out pictures or dolls' clothes? Perhaps a roomy fitted box in which to keep all these small, elusive, and much-needed goods would be a boon. It could be kept on a high shelf, well away from little people's fingers, and would be always ready for action! Suitable wooden boxes with lids were once to be had from the storekeeper, but as they are now very scarce, pieces of cardboard covered with material and stitched together will make a good substitute.

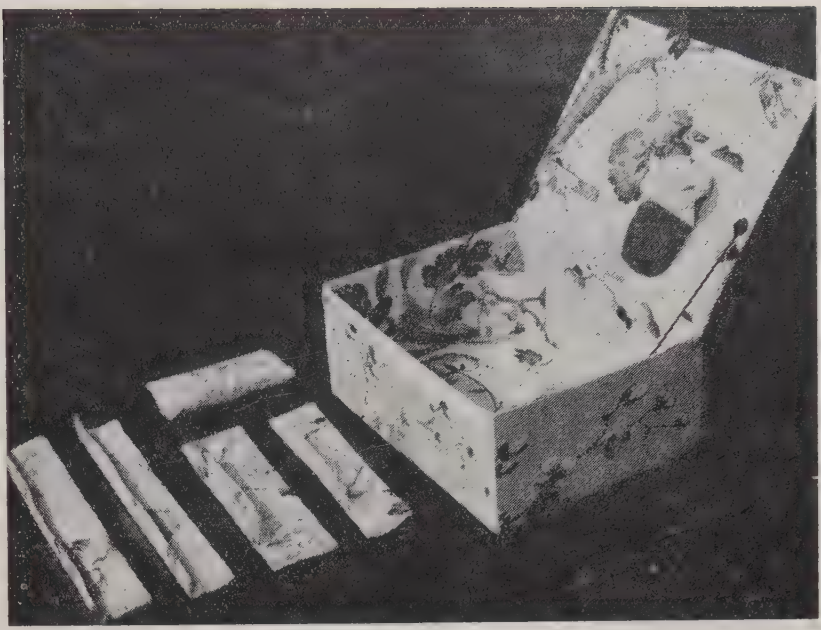
Constructional Method

To make the box you will need a quantity of cardboard, a little less than 2 yards of cretonne, flowered cotton, gingham, linen or furnishing material, strong thread, a piece of wadding, and a length of cord. The cardboard can be cut from hat or dress boxes or light cartons. If you hunt through your piece-bag, you may find enough suitable material to cover the box; the lining could be made of contrasting fabric if there is not sufficient of one kind. Of the cardboard you will need:—

2 pieces measuring 13in. x 10in. for lid and base.

2 pieces measuring 13in. x 5in. for back and front.

2 pieces measuring 10in. x 5in. for ends.



The shape of fitments and the position of corner supports.

These are the outer pieces of the box itself, and for the fittings, which can be lighter in weight, you must cut:—

2 pieces measuring 13in. x 1in. for front of long trays.

1 piece measuring 13in. x 1½in. for base of cotton-reel tray.

1 piece measuring 13in. x 2in. for base of knitting-needle tray.

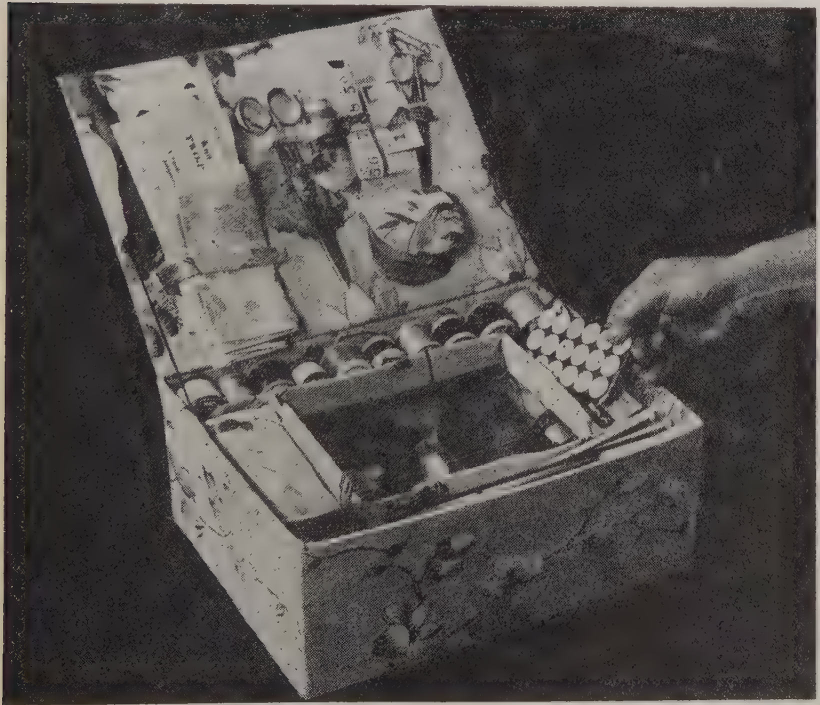
4 pieces measuring 3¼in. x 3in. for corner supports.

2 pieces measuring 7in. x 1in. for sides of end trays.

2 pieces measuring 10in. x 3in. for bases of end trays.

Each section of cardboard requires two pieces of material for covers, so cut out the required number, using the cardboard sizes as a guide and leaving about ⅝in. turnings. Examine the pieces of material cut to cover the top and bottom, and select and put aside the most attractive piece for the outside lid.

Take the 13in. x 10in. piece of cardboard for the base and two pieces of material; machine round three sides of the covering, keeping the stitching straight and making the corners very square. With sharp scissors trim the edges to about ⅜in. and cut across the corners. Turn inside out, pull up the corners with a needle, and insert the cardboard. Turn in the open end and oversew with firm stitches. Try to keep the machining to the exact size



"A place for everything."

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MORE FOR BRITAIN

Announcing facilities for sending more food to Britain by the voluntary saving of food coupons

Many people have requested some official channel through which they could send in unused food coupons, meat and butter coupons in particular, with the assurance that the food thus saved would definitely be sent to Britain. It is a fact that when meat and butter coupons are not used by *anyone* in N.Z., the food they represent is then definitely available for export. When sugar and tea coupons also remain unused they enable N.Z. to draw on less from overseas and so make more available for others. Accordingly, as an aid to those people who wish to make some voluntary effort to help world food supplies, the Minister of Supply has announced that:—

1 People wishing voluntarily to save food in this way can do so by sending unused food coupons to their local Rationing Officer or to an authorised collecting organisation.

2 Unused food coupons being sent to a Rationing Officer should be placed in a sealed envelope, together with a statement setting out the name of the sender, how many of each kind of coupon are enclosed, and (when butter coupons are sent) the name of the retailer with whom registered.

3 Envelopes should be clearly addressed as follows:—"More for Britain", Rationing Officer, (and name of your town).

4 Envelopes should be handed in at your nearest Post Office, or posted.

5 If you are a member of an organisation which has been authorised to collect coupons (organisations will advise their members on this point) you can give your coupons to the Secretary, in envelopes, together with the information set out in (2) above.

6 *Coupons should not be sent to either the Rationing Officer or to an organisation until AFTER they have expired.* This is necessary so that no unauthorised use could possibly be made of coupons and so nullify your self-denial. It would be preferable for coupons to be sent in during the week following the end of each 4-weekly ration period.

7 No money should be sent. The cash value of the coupons is NOT required — just the coupons themselves.

Use your full rations if you need them but whenever you can spare some send in your unused food coupons as outlined above (AFTER they have expired) or destroy them yourself. Do not give them to friends or hand them to your retailer. The food represented by meat and butter coupons can go to Britain only if the coupons are not used by *anyone* in New Zealand. So, destroy or send in your unused coupons — do not pass them on.

SAVE A COUPON—
MAKE MORE FOR BRITAIN

Issued for the Food and Rationing Controller, by the Economic Information Service.

EIS.MB1

of the cardboard so that the material is stretched firmly over without wrinkles or puckers, as the appearance of the completed box will be made or marred by the way the separate sections are finished. Make the front, back, and two end sections in exactly the same way, and the four pieces for the corner supports. Next take the back and one end and, holding them on edge to form a corner, estimate the position of the support. You will find that it should be placed about 2¾in. from the end of the sections. Slip stitch into place, continue to set in all four supports, and then oversew the corners. Sew this frame to the bottom section with firm stitches. By now the workbox will really be taking shape and you will be ready to start on the lid.

A Place for Everything

Take the lining and stitch on one piece of material ½in. wide, 7in. long, about 3½in. from the front edge. This is to hold scissors, thimble, bodkin, packets of needles, or knitting gauge, so stitch down at appropriate places. Be sure to leave the loop big enough to insert the thimble and tight enough to hold it in place. Make a needlebook of a double piece of covering material with woollen cloth leaves and attach to the lining. On the opposite side make another strap to hold the knitting or crochet leaflets and patterns or transfers in current use. Cut two pieces of wadding exactly 13in. x 10in. and tack one on the wrong side of the lid lining and one on the outside cover. Sew lining and cover together along the front edge and two ends, leaving the hinged side open. Trim edges and corners, and turn and insert the cardboard. Turn in the raw edges and oversew to top edge of the back of the box. Use good strong thread and keep the stitches fairly close. Take a piece of cord for a stay to prevent the lid falling back, make a whorl of the cord and attach to the lid; secure the other end inside the box on the end. Stretch the cord tightly so that the lid remains upright when opened.

The trays for knitting needles and reels of cotton are made of two covered sections sewn together on the long side. The cardboard will have to be trimmed **slightly** less than the 13in. of the box sections to allow for the thickness of the cloth covers. Beware of trimming off too much, however, or the trays will not fit close to the ends. The two end trays are made rather differently—the 1in. side does not stretch the entire length, but is cut short either end to allow the base of the tray to slip under the bases of the two long compartments. Stitch firmly together at the points where the sides of the trays meet. Make a pin cushion 7in. x 3in. to fit into the end tray.

"The Art of Being a Good Neighbour"

THE many readers who entered for our competition this month are unanimous in their opinion that the practical application of the Golden Rule is of primary importance if a person wishes to qualify as a good neighbour. We are indebted to "Averil," Marlborough, for the Greek version: "Do not that to a neighbour which you would take ill from her."

The first prize was awarded to "Bry," Eltham, for her comprehensive and helpful little essay, and the second prize is shared by "Homespun," Halcombe, and "Lincoln," Dannevirke. "Khorasbad," Marlborough, was commended.

First Prize

THE dictionary tells us that the word art means skill, and I think that the latter in connection with being a good neighbour implies practice in exercising the following sterling qualities of character.

1. **Kindness and helpfulness:** Both lessen our many problems, especially when the helpfulness is genuine and does not conceal the bogy of interference. Our guiding thought should be, "What do we live for, if it is not to make life less difficult for each other."

2. **Loyalty:** We must be quick to defend each other from unkind words. This is a wonderful trait and finally brings a sense of reliability and trust.

3. **Tolerance:** We must learn to accept and respect different ideas on the everyday routine of running a home, and different views on bringing up a family. After all, we ourselves are not infallible.

4. **Cheerfulness:** "A good laugh is sunshine in a house"; may we not forget that cheerfulness inspires and brightens the lives of those about us.

It is essential that individuals and nations strive to become good neighbours, for the world today has an urgent need for exercise of this lovely art.—**"Bry," Eltham.**

Second Prize (Equal)

Of Courtesy, it is much less
Than courage of heart or holiness,
Yet in my walks it seems to me
The grace of God is in Courtesy.

So wrote H. Belloc. It is certainly one of the essential traits of a good neighbour. Dependent as we are on our neighbours, we should practise a code of good manners towards them.

One needs the will to give ungrudgingly when the other is in trouble: it will never be regretted. The good neighbour should borrow so seldom that it becomes a privilege for the other to lend. Her visits should be so arranged that they are always welcomed by the other.

Perhaps her greatest function, however, is to be a friend, listening, consoling, cheering and advising. She should show interest but not curiosity in the other's affairs. The former is appreciated, the latter resented.

Such is my ideal neighbour!

"Homespun," Halcombe.

Second Prize (Equal)

I THINK the art of being a good neighbour lies in the exercise of a spirit of kindliness tempered by discretion, in good-humoured tolerance and a wise restraint of tongue. Genuine kindliness will make us ready to help in many little ways, in gifts, in labour, or in sympathy, but discretion must be exercised. Steady neighbourliness is better than spasmodic bursts of generosity. To be good neighbours we must be tolerant of other people's likes and dislikes and above all never gossip.

We should live up to the command, "Do unto others as you would that they should do unto you." If we could begin to live up to this standard and then revise our interpretation of the term "neighbour," and try to think of the whole world as our neighbour, then surely meanness and cruelty would disappear and there would be an end of war.—**"Lincoln," Dannevirke.**

Commended

THERE is an old Arab proverb which says, "Keep your tents separate, but your hearts together." In this maxim lies the root of the art of being a good neighbour. "Keep your tents separate" . . . in other words don't always be popping in to see your neighbour, unless you ring to say you are coming, or are invited. Surprise visits are very nice but . . . remember the time Mrs. S. dropped in when you were making your yearly expedition into the earwiggy depths of those dreadful old cupboards in the washhouse? No woman likes to be "caught" in Monday's oldest washing frock, or with her hair in curlers, or with nothing in the house but stale bread and last week's butter for afternoon tea.

But it is only when trouble, such as serious illness in the family, comes that we realise whose hearts are really with us. Not the "tut-tut-ting," curious visitors who sit sipping tea and talking maddeningly to the detriment of our overstrained nerves, but the woman who just slips in, while the lady of the house is busy in the sick room, and leaves a hot cooked dinner on the rack, who quietly collects the younger children, clothes and all, and carries them away to her own home, who feeds the fowls and ducks and pet lambs. She is our real good neighbour. So is the man who, after his own work is done, comes over to see what he can do "now poor Bob's laid up," and stays to do the milking, separating, and feeding the pigs, chops a load of wood, often not going home until nearly midnight. These men and women are worth their weight in gold as neighbours.—**"Khorasbad," Marlborough.**

LIVING 10 miles from the nearest little country centre, I count myself very fortunate in having such splendid neighbours. Everyone is eager to help and a general air of cheerfulness prevails. No matter when one pops in one is always made welcome. A mile and a half away lives Mrs. "Greenroof." She is a splendid housekeeper and a busy mother, yet her kindness and hospitality know no bounds. Mrs "Redroof," a mile to the north, is energetic and helpful—a grand friend to have. Mrs. "Tile-roof" lives in an easterly direction—what a thoughtful little person she is: I spend many a winter's evening at her fireside. Yes, I am lucky to have such good neigh-

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HOW IS YOUR CHILD?

THIN? . . . PALE? . . . OR . . . **STURDY?**

If your Jack or Jill is thin there is a cause for it —in all probability a cause that can be corrected. Check on these items:

1 **DIET—Does your child get enough Protein "building material"? Such as Milk, Cheese, Meats, Dried Peas, Beans, Lentils. Sufficient Milk? Three or four glasses daily. And Cod Liver Oil or substitute each day.**

2 **FRESH AIR—A cooped-up, coddled child won't grow well. Sunshine, exercise, and fresh air day and night, help to build strong frames and robust bodies. Keep those bedroom windows open at night.**

3 **SLEEP—Proper food and fresh air are wasted without adequate sleep. During sleep, repair and building of the body goes on. Growth suffers if sleep is short. Children need 10-12 hours' sleep.**

Get these three right — and watch the improvement!

KEEP THIS ANNOUNCEMENT FOR FUTURE REFERENCE.

FOR A HEALTHIER NATION

bours ever ready to help, and to share books, flowers, recipes, and jokes.—**"New Chum," Otautau.**

A GOOD neighbour should possess the wisdom to know when to offer help and when to refrain from doing so. Many well-meaning people have spoiled all their efforts by overwhelming their neighbours with kind deeds and advice at inopportune times, and what has started in good faith, sometimes becomes a burden to both giver and receiver.—**"Effie," Murchison.**

"FRIENDSHIP is the green hill on Life's dusty road—a wayside spring beside our dusty journeying." Without friendship and love in our hearts we have not learned the art of true neighbourliness. "He who hath not loved his brother loveth not me," saith the Lord.—**"Fay," Kaipara.**

TO a woman particularly a good neighbour is a blessing, and a comfort in any emergency or unexpected event. To have someone with whom we can talk over our problems or exchange ideas and experiences is relaxation indeed for a busy woman, and cements friendship.—**"Vee," Katikati.**

A NEIGHBOURLY RECIPE

MIX together one good portion of thoughtfulness and good cheer. Add a handful of generosity and understanding. Sift in a cup full of loving kindness and a heaped cup of sympathy. Bake in a good oven of warm heartedness and stand for a lifetime without cutting.

—"Pied Piper," Rotomanu.

Would you be a neighbour kind?
Bear this always in your mind—
"The Golden Rule." What is better
In the spirit and the letter?

—"Gertrude," Timaru.

NOT till I lived in a lonely country district did I realise what true neighbourliness meant. One family went out of their way to do little kindnesses, not only for me, but for anyone within their ken. Never a tired drover passed their gate but a welcome cup of tea would be taken out to him. There was never an empty seat in their car for any of the local functions—car-less folk like myself were always included in their party. A new garden could not be started in that district without slips or roots of their choicest plants. From every boiling of jam several pots would be set aside for some neighbour. Rarely was their spare bed empty—there was always some weary city dweller being given a few weeks of country air and hospitality. They were not rich and their home was small, but to me they were the perfect example of the art of being good neighbours.—**"Sara E.," Otago.**

I CALL to mind the "Good Neighbour" who planted my boy's favourite flowers, primroses, mignonette, and stocks all round the base of his grave. She had known him for the 21 years of his short life, and thought this small act would please me, which it certainly did. We know our good neighbours by their deeds, which speak far louder than words.
—**"Nanna," Nelson.**

MY neighbour has all the attributes: loving kindness, sane wisdom in giving advice, a truly heartfelt desire to be of use to her neighbours, and the gay spirit that brings brightness to her fellows, happiness to the children, and gallantly never acknowledges defeat. God bless my neighbour!—**"Marianne," North Auckland.**

NEIGHBOURS

She had charm and personality,
Looks and versatility,
But her children while she gadded,
To the next-door brood were added—
She was NOT
A good neighbour!

She was kind and she was generous,
Her social work was vigorous,
She blessed the whole community
At every opportunity—
She was NOT
A good neighbour!

She was ladylike and reticent,
Her whole conduct was excellent,
But she wouldn't risk the dangers
Of making friends with strangers—
She was NOT
A good neighbour!

She was small and insignificant,
Her home was not magnificent,
But it was her delight to try
To do as she would be done by—
And she WAS
A good neighbour!

I THINK that the art of being a good neighbour can be summed up in three ways: first, a cheerful, friendly approach which offers friendship, but shuns familiarity; second, a deep understanding that responds quickly to another's needs; third, reserve and tact which prevent idle discussions about other people's affairs, and invite confidence without fear of betrayal.—**"Alison Grey," Tauranga.**

IT'S keeping a warm human interest in those living about us that matters. That word of encouragement, that comfort you know a troubled soul sorely needs, that helping hand—give it now when it will be most appreciated. Share in the interests of others. Be happy over their joy. Be warm and generous with praise—in fact, let your neighbour know and feel that she matters to you, and the sun will shine twice as brightly for you both. We who have lived in remote country places have often experienced such neighbourliness, the loving, kindly friendships that make life so good. It takes so little effort to be kind and thoughtful, to be interested in one another. Yes, loving thy neighbour is being concerned about her welfare.—**"Tiggetty Boo," Katikati.**

Competitions

NOVEMBER

What have you chosen as the four most exciting Christmas gifts you have ever received? Head your entries "Christmas Presents," and send them in by November 15.

DECEMBER

It would be interesting to hear how important a part coincidences play in people's lives. One of the commonest forms of coincidence is to receive an unexpected message or a visit from a person of whom you have been thinking. Another quite frequent occurrence is when mention has been made of some particular subject in the course of conversation, and the first book or newspaper you happen to pick up afterwards contains a reference to that very topic. But it is of the more unusual experiences I want you to write—instances that indeed prove the truth of the old saying, "Truth is stranger than fiction."

"STRANGE COINCIDENCES."

Entries close on December 15. First prize 10/-, second prize 5/-.

"MARY,"
"Journal of Agriculture,"
Box 3004, Wellington.

WE are told to "Love thy neighbour as thyself." I think this the keynote of being a good neighbour—to be friendly, interested and understanding in joy or trouble, to be ready with a helping hand, a cheery smile, to be able to give and take. It is easy to be a graceful giver, but not so easy for some of us to receive gracefully, so do not be too independent, for although independence is a good quality, it may be overdone. I think these lines sum up the subject very neatly:

Life is a one-way street,
And while you are passing through
Do unto others whom you meet
As you would they should do unto you.

There is no going back,
All wishes are in vain,
So, do that kindness—do it now.
The chance ne'er comes again.

—**"Ira," Cromwell.**

MY neighbour is a kindly, cheerful soul, with a friendly interest in her neighbours and their doings, but having an abhorrence of malicious gossip. She has great generosity of mind and delights in helping "lame dogs," though she has a sturdy independence of spirit herself. In her own troubles she has courage and reticence, while she has infinite pity for those whom sorrow or sickness has touched. Hers is a sociable nature and she loves young folk around her. In religious matters she is tolerant and is willing to help with all good causes that make for a better and happier community life. In the country such a good neighbour is by no means a rarity.—**"Francisca," West Coast.**

Let me be a little kinder; let me be a little blinder
To the faults of those about me; let me praise a little more;
Let me be a little meeker with a brother who is weaker;
Let me think more of my neighbour and a little less of me.

"Vista," Waikato.

P1

STAMPS

1945 N.Z. Catalogue—7/9 Posted

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BOOKS to READ

"Looking for Trouble," by Virginia Cowles. This is a book by an American woman journalist and is full of incident, the author having the ability to "scent" news. She covers the Spanish war from both angles, is in Czechoslovakia when the Germans march in, and has many interesting and exciting adventures.

"To Sing with the Angels," by Maurice Hindus. This novel has for its setting a small village in Czechoslovakia at the time of the German occupation. The story centres round a local youth of German parentage who spends some months in Bavaria in search of health, during which time he becomes a follower of Hitler. He is sent back to his village as a Nazi to take charge. The reactions of the inhabitants are well portrayed. It is an excellent study of what has taken place in hundreds of European towns and villages, and it is not only good for us to realise what some of our fellow-beings have been through, but after reading such a book we appreciate more fully our own good fortune to be living in a country such as ours.

"Tobruk to Turkey," by Frank Clune. This is more or less a diary by an Australian who was sent to the Middle East as a Red Cross commissioner. It deals with his journeyings in the east, his visits to the battlefields, and to Jerusalem, Syria, and Egypt, and finally to Turkey where he dons civilian clothes again. The book abounds in both humour and pathos.

"One Pair of Hands" and "One Pair of Feet," by Monica Dickens. Could a book by a descendant of Dickens be anything but interesting? In "One Pair of Hands" his great-granddaughter tells of her experiences when she decides to see life in the raw and takes a job as a cook and general rouseabout in various households. It is extremely amusing, as is "One Pair of Feet," wherein she describes wartime nursing. She is a trifle hard on the nurses, though she is full of praise for some of them.

"Cross Creek," by Marjorie Rawlings. By the author of that charming novel, "The Yearling," this is an autobiography of the writer's life on her farm in Florida. Her descriptions of the scenery and native flora, and her encounters with the coloured inhabitants make for good entertainment.—**"Rahiri," Waikato.**

LADY IN GREEN

In this glade lives a great lady.
Green-swathed the garment that she wears
Through summer's pleasant pageantry.
Her nut-brown arms are stretched to give
Protection to all living things.
Shelter she offers, and retreat
To every tiny one with wings.
To burrowing moles about her feet
She sings the summer of the years
In muted tones. In stress of storm
She croons and sways, and wraps strong arms
About her birds to keep them warm.

Secure she stands, a very queen,
Her slender form in shining green.
And yet, for all her vigour, she
Is so far wed to frailty
That any man may cast her down;
May bring her arms, so firm and brown,
Low as the earth, to hide her face
For shame that she so falls from grace
And inviolability.
Any man may mark her place,
And any lout can fell a tree.

—Betty Maitland.

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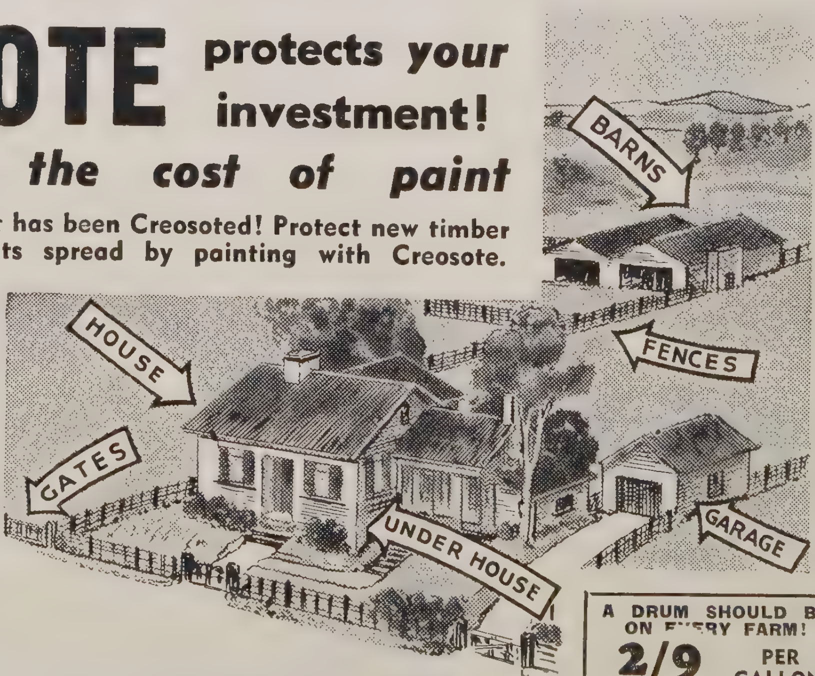
at one-tenth the cost of paint

Borer won't touch wood that has been Creosoted! Protect new timber from Borer and prevent its spread by painting with Creosote.



It gives immediate protection against rot and decay at one-tenth the cost of paint. Its attractive, warm brown finish blends with any colour scheme and it is much easier to apply.

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Mary's at - Home -

DID you know that the October issue of the "School Journal" is to be written entirely by children? I think it is a grand idea, and the "Journal" should prove very interesting. We sent in a few contributions from the school here—all the pupils are Maoris.—**S.J.M., Whatuwhiwhi.**

WE have a lovely big garden which should be a picture this coming summer. There are palms and cabbage trees, pink and white camellias, lilacs, rowans, and forsythia. I am counting the days till they show new life.—**"Pal," Linwood.**

RECENTLY we experienced about two and a half feet of snow, and there is still a covering of nearly six inches which is thawing very slowly on account of the frosts. The stock suffered severely. We took refuge in our old harvest-kitchen, a large concrete-floored room containing an underground water tank and two stoves. We use the place at harvest time to prepare meals for hungry menfolk. Though it lacks the comfort of a living-room, it is clean and warm in emergencies. We had only candles for light for a fortnight; it is grand getting the electricity back once more. With such a cold winter we are doing quite a lot of skating. Two or three times we have skated on the lagoon which is from 10 to 12 acres in area. The ice is so clear this year that we have been able to take snaps of the mountain reflected in it. This clear ice is splintery and less dangerous than the white snow ice, which is inclined to break into blocks and form hidden trap-doors.—**"Clara Jane," Rakaia.**

For a Friend's Birthday

This is the day
When your soul started on its earthly way.
I send you every golden wish I can,
Yea, all that is in tune with God's great plan,
All you can be, or do,
I wish for you.
I am so glad you came
Into this world of gold and grey,
So glad your soul's bright flame
Shone upon me—but gladder still to know
Your great heart's overflow
Will, to the very end,
Call me your friend.

Come what will and come what may,
Here's the door of a brand new day.
Here am I with my pilgrim load
Off once more on the wonder road.
Yesterday's tracks went with the night,
Tomorrow's trail is hid from sight.
Yet sure am I, as I can be,
Today holds something sweet for me.
—Fay Inchfawn.

—From "Darky Top," Northland.

THE wattle is flowering along the creek. I think the English name mimosa a far more lovely name for such a delightful tree. Swelling buds on the willow and the first green shoots of young grass add their attractions, and my heart echoes the song of Thomas Nash, the 16th century poet—

Spring, the sweet Spring, is the year's pleasant king;
Then blooms each thing, then maids dance in a ring,
Cold doth not sting, the pretty birds do sing,
Cuckoo, jug-jug, puwe, to-witta-woo!

—"Homespun," Halcombe.

These are the things I prize
And hold of dearest worth:
Light of the sapphire skies,
Peace of the silent hills,
Shelter of forests, comfort of the grass,
Music of birds, murmur of little rills,
Shadows of clouds that swiftly pass,
And, after showers,
The smell of flowers;
And of the good, brown earth—
And best of all, along the way,
Friendship and mirth.
—H. Van Dyke.

I HAVE been enjoying reading your "Good Neighbour" pages for many months. I especially loved the issue which contained the "Twelve Beautiful Things" competition, and your own page on Beauty. It was an inspiration, and I thank you for all the lovely thoughts you have given me.—**"Evanne," Oamaru.**

I AM going to tell you about a useful gadget I have. It is a very strong stick about 32in. long and I keep it in my kitchen-laundry. On washing day it serves as a copper stick. A cup hook is screwed into one end, and though the hook is used to hang the stick up by, I put it there for quite a different reason. As our blinds have good springs, they often fly up out of our reach. Instead of climbing on a chair or getting the stepladder, it is a simple matter to insert the end of the stick holding the cup hook into the crochet ring on the blind and pull it down. I also find my stick very handy at spring-cleaning time, as it saves me a lot of climbing. I have had a V-shape cut out of the other end so that I use it to hang pictures or take them down. The picture cord is easily slipped into place by the cut-out end of the stick.—**"E.A.G.," Oamaru.**

I WAS most interested in the "Magic Carpet" competition and considered your first choice excellent. Of course, I guessed that England would still be the Mecca of the majority of "Good Neighbours," for we had that idea inculcated into us at school; in fact, I think it must be for that very reason that I lost all desire to visit the Old Country—maybe we had an overdose. However, your variety of choices made very good reading. For my part, after having visited the East, there is one country which I should particularly like to see had I a magic carpet (but I thought I would leave it to someone else to do it better literary credit) and that is the United States. And for the one simple reason—that I like the people. It struck me as strange that with all we read about scenic attractions, etc., no one seems to have a simple reason like this for wanting to visit a country.—**"R.E.E.," New Lynn.**

THE "Journal" arrived this morning and I was cheered up by reading your pages. It is a dismal day outside with rain and cold winds. How I wish I had a magic carpet; I'd take a leisurely trip round the world, the

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Paerata.

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THE PRINCIPAL,
Wesley College, Paerata, Auckland.

place I most wish to see being the British Isles: England with its beautiful historic buildings, Scotland with its heather-covered hills, and Ireland with its lakes and dells.—**"Scotty," Bay of Islands.**

WHAT interesting paragraphs there are in our July issue. "Jonathan," I heartily agree with your ideas of a home; and "Peggy," I, too, love a garden. Mine is perhaps small compared to others', but I have had to work so hard to get each little plant to grow in cold, damp clay soil that I revel in each flower which responds to my loving care. Sometimes through sickness I have to neglect my plot, but great is my joy when I am once more allowed outside, specially if I see some new little guest in my garden. At present the spring flowers cheer me during the dreary, dull days we have been experiencing. So, neighbours, try to get some plants to flower and bring you happiness, even if you can only have a bulb in a flower-pot.—**"Darky Top," Northland.**

I DID enjoy the "Magic Carpet" glimpses, and wish that all "Good Neighbours" might carry out their fancies. I also pass on this little thought to folk who are moving to a new home: "When you move into a new neighbourhood, beware of the new neighbour who warns you against the other new neighbours!"—**"Roundabout," K.C.**

WHEN I read "Where Poppies Blow" and you spoke about those to whom restful sleep is denied for a time, I thought of these two lines from "The Sermon in the Hospital":—

He gives His angels charge of those who sleep,
But He Himself watches with those who wake.

Don't you think it is a most comforting thought? I do enjoy the poems and extracts in the "Journal." What a wealth of poetry there is in the world.—**"Cloudy," Ashburton.**

THIS is my first letter to you, as I have only just started to get the "Journal." I find many interesting things in it, and love reading the news from other members of your happy circle. Being a farmer's wife and working more often out on the farm than inside the house, the different seasons mean a lot to me. Because I love Nature and have a lot to do with the handling of stock, I consider the first month of spring the most enchanting month of all.—**"Elsie Anne," Raurimu.**

It often falls (as here it erst befell)
That mortal foes do turn to faithful friends,
And friends professed are changed to foemen fell,
And th'end of both, likewise of both their ends.
For enmity, that of no ill proceeds,
But of occasion, with the occasion ends;
And friendship, which a faint affection breeds
Without regard of good, dies like ill-grounded seeds.

—Spenser.

OUR typewriter has been dropped since I last wrote, to its detriment, unfortunately. Half the letters do not move now, and the cast-iron front is broken. A small nephew was responsible, but luckily, it did not hurt him. Hubby is not exactly pleased about the incident, though! I have just accomplished my most ambitious effort yet in dressmaking—a tailored overcoat from an old tweed suit. It needs only a final pressing. I've gone up ten points in my husband's estimation, so I am well content, especially since I have done no needlework since sewing lessons at school when I was 15.—**"Homespun," Halcombe.**

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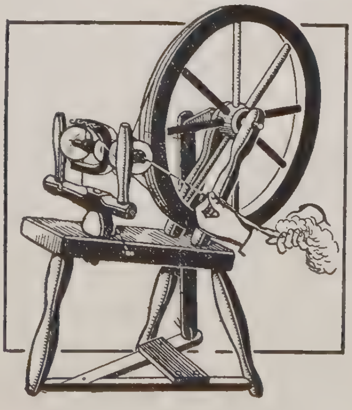

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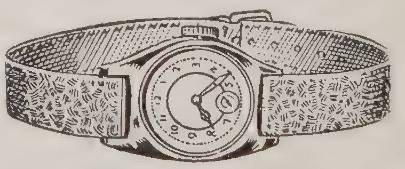

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WE have had 26in. of snow here, and as it lay for three weeks, we were heartily sick of it. However, if we get a good season later, we will not complain, and one soon forgets all the discomforts—no power, no mail, no bread, no water, burst pipes, and having to cook over an open fire. All the worry about the stock doesn't end with the thawing of the snow. Our upsets in the house were nothing compared to those with which the menfolk had to contend.—**"Cloudy," Ashburton.**

THERE always seems so much to do in the winter that I wonder what I do in the summer, when the children do not wear so many clothes and the washing dries quickly and there's no mud. This has been a hard winter, as we have had so much rain and snow, but it will mean good crops and gardens, we hope. The spring and peace both coming at once are wonderful. I do feel we deserve to celebrate and not be too calm and matter-of-fact about it, don't you?—**"Bee," Timaru.**

A Friend

She seemed to know just when she ought to smile
At little jokes we made.
She seemed to guess when some dark travel-mile
Had left our hearts afraid.
She seemed to know just when to grip one's hand,
Or when to turn away
With silent sympathy—she'd understand
Life's labour and life's play.
It wasn't that she talked a lot to us,
It wasn't that she did
Big actions brilliant with grand helpfulness—
Each kindly act she hid!
But on rough seas of storm and tempest gloam
She'd never let us drift,
But take the helm and steer us bravely home . . .
Such friendship is—a gift.

—*Ianthe Drage.*

(Sent by "Biddi-Jan.")

I HAVE no liking for the mud that comes with the soft spring weather, but a drift of yellow daffodils blowing in the wind is a glorious sight and compensation for any unpleasantness. —**"Parnteea," North Auckland.**

WHO could fail to be moved by the beauty of the white countryside on a frosty morning, or feel exhilaration as the sun pierces through the mists and reveals its glory to a welcoming world.—**"Pussy," Taupiri.**

I ENJOYED your letter on poppies. Somehow these flowers have always had a fascination for me, both the iceland and the shirley variety with their amazing colours. In this valley spring is heralded by masses of wattle, and daffodils are in bloom in the warmer places.—**"M.," Feilding.**

WE live in Taranaki where the majestic Mt. Egmont is always before us, never so beautiful as when it is clad to the bush-line—and below —with a mantle of gleaming white snow. What matter the cold winds when one can gaze on such grandeur. —**"M.R.C.A.," Kaimata.**

I HAVE a pear tree growing in an old orchard on a hill which commands a good view of the surrounding country. Each year the pear tree is a blaze of white and hundreds of bees come seeking honey. I love the blossom time and sometimes take my sewing or knitting and sit on a limb of that old tree. It is just heavenly, with frisking lambs round about, and green grass, and every tree alive with spring promise.—**"Marion," Taumarunui.**

SPRING never fails to imbue me with the necessary vim to get busy in the garden. The sun lies warm upon the soil. What pleasure the sun brings, for it seems to be in alliance with old Mother Earth, and between the two Old Man Winter simply has to fly. The spring warmth never fails to triumph over the frosty thraldom of cold winter days.—**"Roundabout," K.C.**

IN October I get ready to welcome the summer again. I make a new dress or two, and plant gladioli bulbs and wonder what colours they will be. It is always a busy month for me, but I love it.—**"Jessie," Mokau.**

WHAT joy one feels gazing at a clump of violets resting among their green, rain-glistening leaves. The fragrance of their scent mingles with the smell of the rich brown earth about their roots. A massive, boldly-coloured rhododendron bush puts forth frothy heads of bloom, and beside it a tiny plum tree is in blossom, gracefully poised like a ballerina. —**"Judith," Ohau.**

Can You See?

Oh, there's laughter in each sunrise,
A kiss on ev'ry rose,
And a story in each bird-song
That no one really knows.
Oh, there's wisdom in the heavens,
Deep comfort in the seas,
And there's promise in the starlight,
Delight in ev'ry breeze.
Oh, there's yearning in the grasses,
And joy in clouds above,
And in ev'ry part of Nature
The message of God's love.

—*Paulette Leaning.*

It was a sparing speech of the Ancients, to say, "That a Frend is another Himselfe": for that a Frend is farre more than Himselfe.—Bacon.

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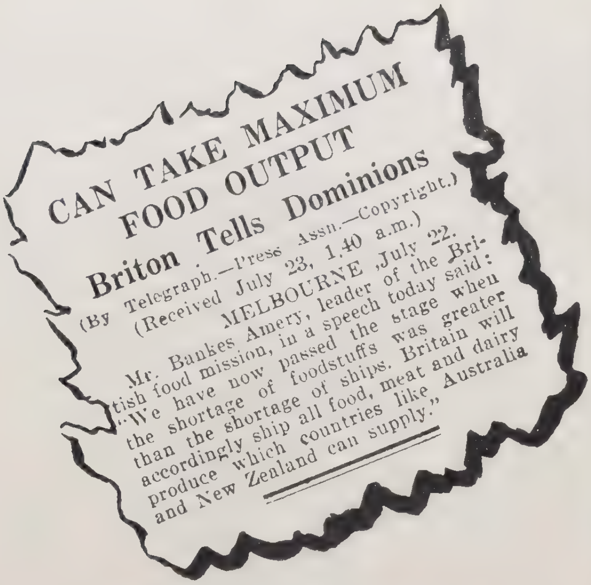


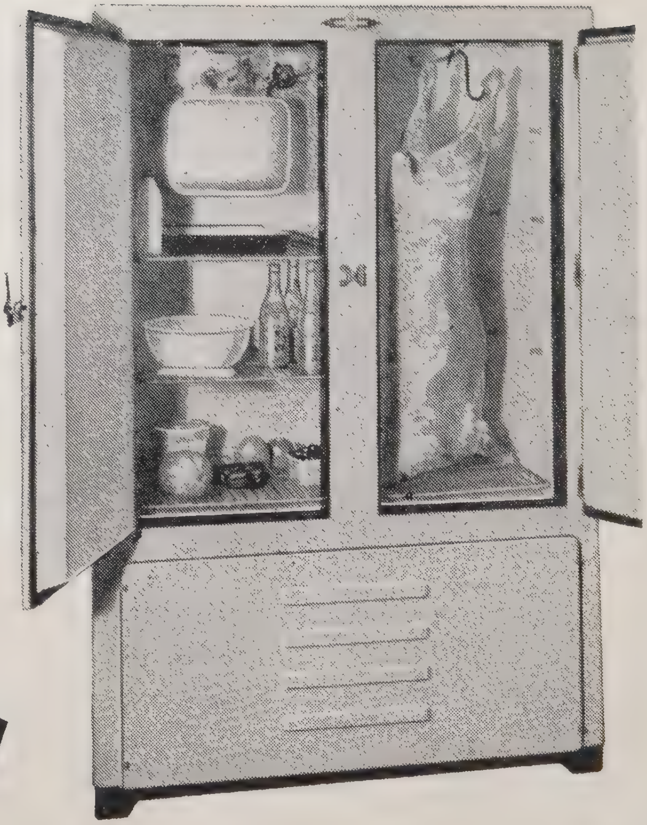
CAN TAKE MAXIMUM
FOOD OUTPUT

Briton Tells Dominions

(By Telegraph.—Press Assn.—Copyright.)
(Received July 23, 1.40 a.m.)

MELBOURNE, July 22.

Mr. Bankes Amery, leader of the British food mission, in a speech today said: "We have now passed the stage when the shortage of foodstuffs was greater than the shortage of ships. Britain will accordingly ship all food, meat and dairy produce which countries like Australia and New Zealand can supply."



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Every New Zealander knows of the disastrous food shortage in Europe. Even North America is still under rigorous rationing. UNRRA, through CORSO, can use every pound of foodstuffs New Zealand can produce—and there is now no shortage of shipping.

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This is where Frigidaire can help to produce even more food—by saving time and by avoiding waste. The new Frigidaire Farm Model 18, with its 18 cubic feet of storage space, its 17½ square feet of shelving, its scientific cold distribution, its dependability and its simplicity, enables the farmer's wife to prepare meals SEVERAL DAYS IN ADVANCE, thus saving time, trouble and fuel. The food will be as tasty and delicious as though just cooked. In addition, the food will keep perfectly fresh and not a scrap will be wasted. Thus the farmer will be able to supply even more food to relieve the threat of starvation which stalks the devastated lands of Europe.

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Pleasant Puddings

PUDDING may not be wholly necessary to a person's daily intake of vitamins, but it forms a very pleasant finish to a dinner. These busy days we are apt to stick to the same few recipes, yet, by exercising a little ingenuity in the use of our everyday ingredients, it is quite simple to achieve a welcome variety in the matter of puddings. Take apples, for instance. They are plentiful just now, so instead of making a pie of them (apple pie might almost be termed our national pudding!) why not cook them on top of a scone mixture, as in apple sandwich. If you are sifting the flour for an apple shortcake, add a couple of teaspoons of cinnamon—it will give the shortcake a delicious spicy flavour. Stewed apples gain in attractiveness when set in a mould with gelatine (1 dessertspoon of gelatine to each cup of apple pulp), and if you have any juice left over from stewed fruit, use it to bake apples in—slice each apple into three big rings and sprinkle with grated lemon rind and raw sugar.

Grated raw potato is good in pancakes. Flavour them with almond essence and serve hot with jam in place of sugar and lemon juice. And talking of pancakes, have you ever tried baking the batter instead of frying it? Pour the batter over sliced apples or chopped raw prunes (previously soaked overnight) and bake 30 minutes in a moderate oven. Jellied bread pudding is a nice change from bread custard, and here is a variation of honeycomb pudding—and others—for you to try:—

VANILLA WHIP.

1½ dessertspoons gelatine, essence of vanilla, ¾ pint milk, whites of 2 eggs, 3 tablespoons sugar, pinch salt.

Heat the milk and dissolve the gelatine in it, also stirring in the sugar and salt. Leave the mixture to cool, and when it thickens whip it well with a rotary beater. Beat the whites of the eggs till stiff and lightly fold them into the mixture, then add the vanilla and continue beating till the pudding is stiff enough to hold its own shape. Place in a mould to set. If desired, the egg yolks can be used to make a custard to serve with the pudding.

RAINBOW PUDDING.

1 tablespoon butter, ½ cup sugar, 1 egg, ½ cup milk, 1 cup flour, 1 teaspoon baking powder, essence of vanilla, cocoa, cochineal.

Cream the butter and sugar, add the egg well beaten, then the milk, sifted flour and baking powder, and vanilla. Divide the mixture into three equal parts. Leave one as it is, and colour the other pink, and the third chocolate. Drop the white mixture in a greased basin first, then the pink, and lastly the chocolate. Steam quickly for ¾ hour and serve with jam sauce.

Jam Sauce: Mix 1 cup water, 1 tablespoon sugar, 1 tablespoon raspberry jam, ½ teaspoon lemon juice, and 3 drops of cochineal in a saucepan and cook till about half of the mixture boils away. Strain before serving.

RHUBARB AND SEMOLINA MOULD

1lb. rhubarb, 3oz. sugar, 2½oz. semolina.

Cut up the rhubarb and leave under sugar overnight. Stew in the usual way and press through a sieve. Add the semolina, stirring well, and cook over a slow heat till the semolina becomes clear. Turn into a mould or individual dishes to set. Serve with custard.

PRUNE PUDDING.

8oz. flour, 3 or 4 tablespoons milk, 2oz. shredded suet, 4oz. prunes, 1 teaspoon baking powder, 3 dessertspoons sugar, ¾ teaspoon nutmeg, 2oz. raw grated carrot.

Wash and stone the prunes, cut up, and add to the sifted flour and baking powder. Mix in the sugar, suet, and nutmeg. Prepare the carrot, grating it finely, and add, mixing all the ingredients together with sufficient milk to form a firm dough. Turn out on

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to a floured board and make the mixture into the shape of a roll, then tie it up in a pudding cloth and place in a saucepan of boiling water. Boil for 1½ hours, then remove from the water, take off the cloth, and serve the pudding with custard sauce.

POTATO PANCAKES.

3oz. flour, 1 egg, 1 teaspoon baking powder, essence of almonds, 2oz. sugar, ½lb. raw grated potato, raspberry jam, pinch salt.

Beat the egg and blend in the flour, sugar, salt, baking powder, and finely-grated potato. Lastly, add essence of almonds to flavour, and drop spoonfuls of the mixture into hot fat, and cook till golden brown on one side, then turn the pancakes over and brown the other side. Spread with raspberry jam and serve hot.

APPLE DELIGHT.

1 cup flour, 1 teaspoon baking powder, ½ cup milk, pinch salt, 2oz. lard or beef dripping, ½ cup raw sugar, 2 teaspoons cinnamon, 4 apples, 1 tablespoon butter.

Rub the lard into the sifted flour, add the salt and baking powder, and mix to a stiff batter with the milk. Place this in a greased dish, peel and slice the apples into eighths, and arrange them closely together on top of the batter. Mix the raw sugar and cinnamon together and sprinkle this over the fruit and then dot with the butter. Bake in a moderate oven ¾ hour.

JELLIED BREAD PUDDING.

2 cups bread cubes, 1 pint milk, 3oz. sugar, 1 egg, 2 dessertspoons gelatine, ½ cup raisins or sultanas, essence of vanilla.

Dissolve the gelatine in a little hot milk, bring the rest of the milk to the boil. Stir in the gelatine mixture, add the beaten egg and sugar, and cook in a double boiler till the mixture begins to thicken. Place the bread cubes in a basin, add the raisins and vanilla essence, and pour the custard over them. Beat with a rotary beater till light and frothy, and then put into a mould to set.

BAKED CHOCOLATE PUDDING.

1 tablespoon golden syrup, 3oz. butter or dripping, ½ cup milk, 1½ cups flour, 3oz. sugar, 1 dessertspoon cocoa, 1 teaspoon cinnamon, 1 small teaspoon baking soda, pinch salt.

Sift the dry ingredients, mix in the sugar. Warm the syrup, butter, and milk. Cool and stir into the mixture. Pour into a greased piedish and bake 45 minutes in a moderate oven. Serve with chocolate sauce.

Chocolate Sauce: 1 oz. sugar, ½oz. butter, 1 teaspoon cocoa, 1 dessertspoon cornflour, ½-¾ cup milk, essence of vanilla.

Blend the cocoa, sugar, and cornflour with a little of the milk, bring the rest of the milk to the boil, and stir in the cocoa mixture. Just before taking off the fire add the vanilla flavouring and butter.

POTATO PASTRY.

8oz. flour, 8oz. mashed potato, 4oz. fat, ¼ teaspoon salt, 1 teaspoon baking powder, water to mix.

Sift the flour and rub in the fat. Add the sieved potato, salt, and baking powder, and mix to a stiff dough with a little water. Use as a basis for tarts.

GOLDEN PUDDING.

1½ cups flour, 2 teaspoons baking powder, ¼ teaspoon baking soda, 1 dessertspoon butter, 1 dessertspoon golden syrup, pinch salt, handful raisins.

Syrup: ½ small cup sugar, 1 cup boiling water, 1 tablespoon golden syrup, 2 tablespoons butter, lard, or dripping.

Rub the butter into the sifted flour, add the baking powder, soda, raisins, salt, and golden syrup, and mix to scone consistency with milk. Put this into a greased basin and pour over it a syrup of sugar, boiling water, golden syrup, and butter. Place a piece of greaseproof paper over the top of the basin and then place the basin in a saucepan of boiling water and steam 1 hour or a little longer.

—(**Sent in by Mrs. A.R.B.**)

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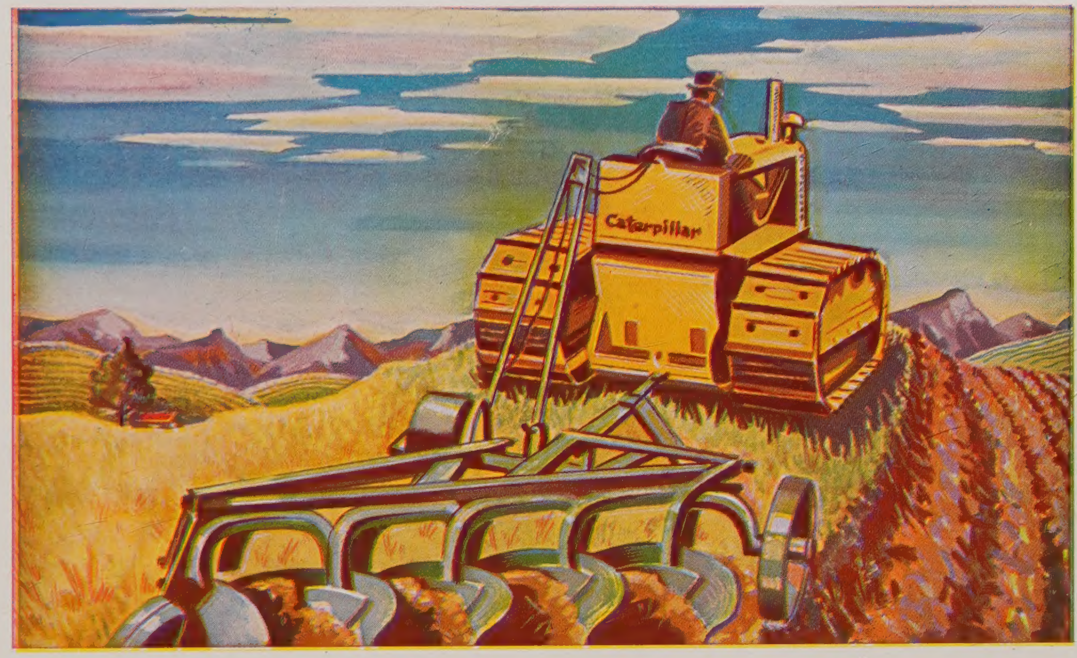

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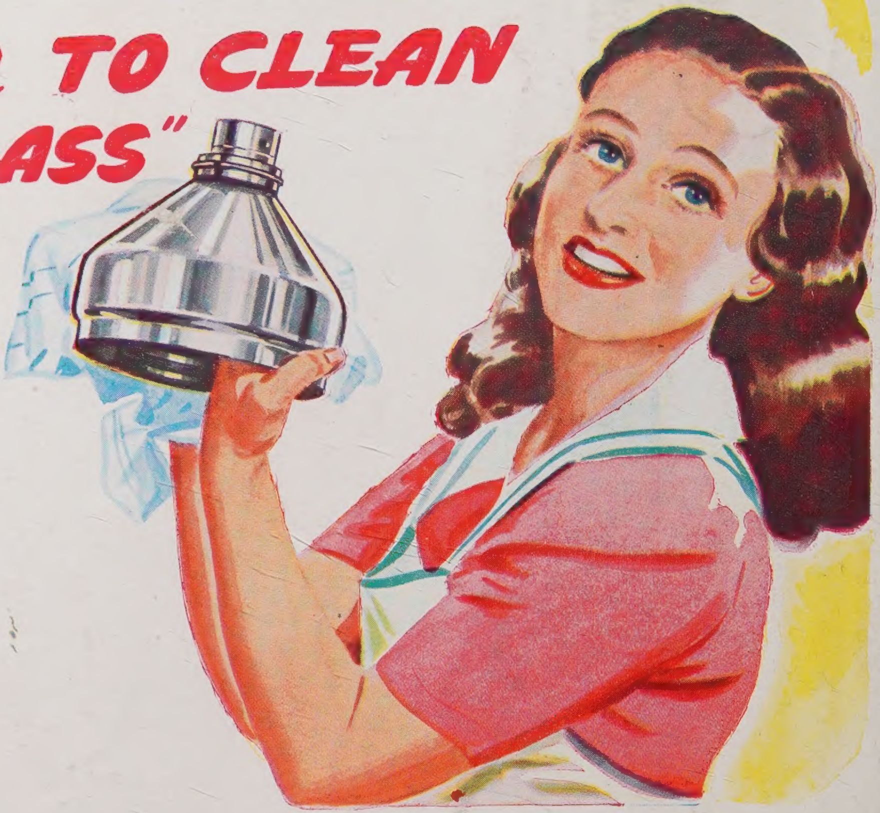

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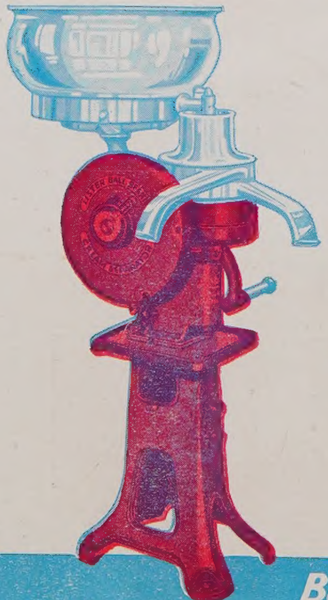

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